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Aesthetics and Performance Evaluation of Post-Industrial Public Parks

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Abstract

Post-Industrial sites are often unutilized and deserted places that are an aesthetic, social, ecological, and physical hindrance to the realm of the cities in which they lie, however they possess enormous potential. With respectful and transformative design, these new public parks gain a variety of benefits that extend well beyond the typical benefits exhibited by public parks due to their rich history, fascinating existing structures, high levels of visual and sensorial stimulation, one-of-a-kind traits, and opportunity for impactful change. By evaluating these post-industrial public parks, knowledge can be gained about what specific elements in the landscape contribute to their overall success with regard to spatial, physical, social, and symbolic qualities.

The research of Abraham Maslow and Kaplan & Kaplan have been vital to general human-environment interaction studies in the field of environmental psychology. By melding environmental psychology theories with the public life/urban form studies of William Whyte, Jan Gehl, and the Project for Public Spaces, this study is able to apply these general innate human needs and preferences specifically to public spaces with unique historical features and significance.

The assimilation of theories informed the creation of a comprehensive set of evaluation criteria directed towards factors specific to post-industrial public parks. The established evaluation, communicated through a long-form narrative with example images and illustrations, analyzes various elements of three case study sites regarding the spatial, physical, social, and symbolic qualities they exemplify. Syntheses are compared to establish correlations between the case studies to further understand each element in the larger context of post-industrial landscapes.
AESTHETICS AND PERFORMANCE EVALUATION OF POST-INDUSTRIAL PUBLIC PARKS

A thesis submitted in partial fulfillment of the requirements of the Honors Program of the Department of Architecture + Design in the Fay Jones School of Architecture, University of Arkansas.

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Introduction

Post-Industrial sites are often unutilized and deserted places that are an aesthetic, social, ecological, and physical hindrance to the realm of the cities in which they lie. Over the last few decades, potential in these sites has begun to be recognized and embraced through new designs that transform the sites into meaningful public parks that support and provide for the communities that surround them. These new public parks have a variety of benefits that extend well beyond the typical benefits exhibited by public parks due to their rich history, fascinating existing structures, high levels of visual and sensorial stimulation, one-of-a-kind traits, and opportunity for impactful change. These additional benefits are created through an accumulation of qualities and the relationship between elements in the landscape, posing the question: how can we evaluate these qualities to understand what makes these history-filled parks successful or unsuccessful with regard to their aesthetic, social, and symbolic values?

The studies by various researchers in environmental psychology have looked at how people interact and react to elements/qualities in the general landscape. There are also multiple theories on what makes a “good” or “aesthetically pleasing” space, however there has not been research that relates these ideas to post-industrial parks. The study and application of environmental psychology as it relates to post-industrial landscapes is an underdeveloped part of environmental psychology literature. This evaluation of post-industrial landscapes, based on environmental psychology theories, is contributing to the knowledge on how to apply these theories to public spaces to evaluate how they perform in various ways. Through the evaluations of my case studies, I hope to bring to light what elements of the landscapes
accomplished what they needed to on an aesthetic and functional level and what components failed in this regard.

This project applies the developed evaluation criterion to three post-industrial case study sites. On-site evaluations were performed to fully and adequately assess the landscape elements. *Landschaftspark Duisburg-Nord* near Duisburg, Germany; *Park am Gleisdreieck* in Berlin, Germany; and *Parco Dora* in Torino, Italy were selected as the case study sites based on the range of characteristics they demonstrate. They represent a wide scope of post-industrial parks regarding overall size, location and distance from urban center, culture, historic background, design style, and type of park; resulting in a study that addresses the multitude of factors that affect the success of post-industrial public parks.
1.0 Chapter 1

Literature Review

1.1 Benefits of Post-Industrial Landscapes

1.1.1 Introduction

Landscape architecture covers many facets of the built world, yet one of the most fascinating sects of the field, in a social, economic, historical, and ecological respect, is the regeneration of post-industrial sites. Often referred to as brownfield sites or simply brownfields, post-industrial landscapes are areas that were previously used for industrial or commercial purposes but have since been shut down, abandoned, or vacated for various reasons. Many sites, when abandoned, are closed off to any use due to the possible contamination of the land by waste, pollution, or both that can occur both during production and post-desertion; yet many are set within or near cities, creating a social and aesthetic hindrance to the public realm. Of all landscape architecture projects, it can be argued that the remediation and design of post-industrial sites has the largest potential for impactful change. Through each remediation transformation, a site can start as acres of contaminated wasteland, continuously polluting the waters of an entire region, to transforming into a place that is actively improving the quality of storm water runoff while refilling the water table. Through each design transformation, the site may go from negatively affecting the aesthetics, connections, and social qualities of the cities in which they lie, to emerging as a destination,
highly populated with people who value the social spaces it provides, the history it preserves, the activities it can support, and the substantial emotions it can invoke within its visitors.

1.1.2 Social Benefits

The social benefits of post-industrial public parks can be compared to the benefits that are associated with other public parks and public open spaces. Nature and open spaces, whether designed or natural, have always been important for the mental health of human beings, especially as urban areas have grown in the past and continue to grow denser. Dak Kopec, author of *Environmental Psychology for Design*, addresses our connection to nature. He states that our environment influences our behavior and guides our actions as it has throughout human history (Kopec 2006). Our instinctive actions towards our environment are largely based on our neurobiological perspective of our surroundings, however our need for the natural world and for open space reaches deeper than our survival instincts; we have higher intellectual needs for these types of spaces. According to Abraham Maslow’s hierarchy of needs, aesthetics is part of a larger pyramid of human needs through which we are motivated to seek beauty, balance, and form in the world around us. Seeking these ideals encourages us to “escape” to nature as Ian McHarg explains in his book “Design with Nature.” In his example, from his countryside house, McHarg is able to see deer and hear birds chirping, “[y]et each year, responding to a deeper need, [he] leave[s] this urban idyll for the remoter lands of lake and forest to be found in northern Canada. . .” (McHarg 2002). This desire to be even closer to nature than we normally are, enforces the idea that solely being able to see the natural
environment does not fulfill our inherent need to be immersed in nature; it does not satisfy our emotional need for being encompassed by natural open space.

In Rachel and Stephen Kaplan’s attention restoration theory, they relate directed and effortless attention to regard for the natural world. Directed attention requires mental effort to achieve an objective or accomplish a goal, while effortless attention is involuntary and is categorized as interest-based attention. The Kaplans use the examples of walking in the woods or taking a stroll along the beach to explain effortless attention. These activities are essential to the preservation of our mental health as they “serve as a powerful and effective means of restoring attentional capacity. When we need physical, psychological, and energy restoration, we are drawn to nature, and the presence of nature in our environment has a profound effect on reducing levels of stress, thereby helping to restore attentional capacity” (Kopec 2006). In order for us to be successful in directed attention activities such as our jobs and necessary daily chores, we must be able to recharge through activities of effortless attention in natural environments.

Throughout history, it is clear that there has been acknowledgement that open spaces are beneficial and necessary amenities. They began as leisure spaces for wealthy families or individuals, expanded to isolated public parks and larger national parks, then were incorporated into city plans as garden cities and industrial towns were created. Though the design styles of all these types of open spaces are highly varied, they all satisfied, at least to some extent, the users’ mental needs for nature and restoring attention capacity through acts of effortless attention.
Around the world, through the construction of extremely dense cities in the 17th and 18th centuries, it became apparent that open space was valued as wealthy families built their own private gardens and plots of land designed in various ways to accommodate leisure activities and hunting. From small private gardens the trend moved toward public open spaces in the 1800s. Parks such as Hyde Park in London and the Champs Elysées and the Cours de la Reine in France provided public gathering spaces for ordinary citizens.

During the 1800s in the United States, the National Parks Movement was the first, most prominent way in which open spaces were being preserved. The first lands to be set aside by the government were Yosemite Valley and Mariposa Big Tree Grove for “. . .public use, resort, and recreation. . .inalienable for all times. . .” (Billig & Smith 2014). This preservation of large open areas through the National Parks Service was not solely for the recreational qualities they provided, but for their aesthetic qualities of scenic grandeur as well. Understanding the value of beautiful natural landscapes along with the program of the popular garden cemeteries was crucial for the forward progress of creating parks and open spaces for the citizens of the United States.

Prior to the creation of public parks in the United States, citizens were using the paths and natural surroundings of cemeteries like the Mount Auburn Cemetery to meet their need for natural environments. The rolling topography and scenic qualities of these cemeteries that were later labeled “garden cemeteries,” were the elements that were replicated when creating public parks (Williams 2014).
Moving forward in time to the present day where public parks are relatively common, the idea of post-industrial public parks pushes the idea of usable open space further to provide these amenities while also preserving important pieces of history. Through the regeneration of brownfield sites, sites that were once social hindrances become assets to the social realm. These sites are generally in prime areas of cities and are therefore vital to the liveliness and connectedness of the city. An open, appealing, and beautiful space that encourages gathering, recreation, appreciation, and relaxation within the city can quickly become the heart of that place. A space that is appreciated has the power to change how people feel about the area in which they live; it can allow a person to notice the positive and beautiful things instead of the negative, it can allow one to take pride in where he or she lives, and it can be the instrument for change in various ways. Post-industrial renewal landscapes are not the only factor in beautifying a city or area, but their revitalizations can kindle progressive changes that foster a socially active environment within a community and a region. Revitalized post-industrial landscapes provide large open spaces that are typically lacking in current urban environments, and these open areas are essential in preserving residents’ happiness and welfare.

1.1.3 Historical Benefits

Due to the influence of the past on their current and redesigned form, the historic benefits of post-industrial sites are significant. Considering a site’s past can greatly affect how people regard it and by capturing the important historical aspects, a design can effectively draw people to understand the history of the site and geographic area. Taking the High Line in New York City as an example, the historic characteristics as well as the physical structure of the elevated
railway acted as the main inspiration for the design, yet its purpose completely changed to accommodate the current needs of the people. Revitalization projects have this unique potential to connect with the past while fulfilling a new purpose to move into the future. This type of transformation is almost always associated with positive feelings of change, improvement, and hope.

1.1.4 Economic, Ecological, and Educational Benefits

Though it is not the focus of this paper, it should be acknowledged that remediation sites have economic, ecological, and educational benefits as well as those in the social, historical, and aesthetic realm.

Most economic benefits are associated with job creation and increased proximate property values after remediation. Specific benefits within the United States can be seen through the U.S.’s Environmental Protection Agency’s brownfield revitalization studies. During the 2013 fiscal year, the EPA found that for every dollar it spent in remediation, it leveraged seventeen times that amount. These projects also bring many jobs to the area for assessment, cleanup, loan fund agreements, maintenance, site program, and continued development near the project. A total of 90,363 jobs across the nation were created during 2013 due to these projects.

Just as Central Park in New York City greatly increased the property value of all buildings within the surrounding area, redesigned post-industrial sites can provide the same benefit. According to the EPA’s study previously mentioned, these projects can “increase residential property values 5.1% - 12.8%” (The EPA 2014).
Addressing ecology and environmental advancement, the benefit of improved ecology is unquestionably an important part of brownfield reclamation. Through a post-industrial regeneration project, a site that is currently contaminating a nation’s waters can be redressed to be actively improving water quality. Cleansed soils can return to supporting plant growth which increases plant and animal diversity and reduces flooding through increased infiltration. The ecological benefits are some of the most extensive as they can begin to influence factors that affect an entire region.

Educational benefits apply to these transformations as well. Education, as it applies to the previous categories of history, economics and ecology, as well as other learning opportunities, can be recognized. Education through signage, exploration, observation, and tours can be important to the success of the site’s transformation. Many designed post-industrial parks currently provide signs explaining the history, the changes made, ecological benefits, and/or the current state of the site.

It is clear that, although this paper is not focusing on all the benefits of revitalized post-industrial sites, these benefits are highly valuable and should be acknowledged when looking at the overall success of post-industrial regeneration projects.

1.2 Theories of Environmental Psychology that Apply to Public Parks

1.2.1 Introduction

Environmental psychology is a field that carefully observes and tests how people respond to their environments, whether it is natural or artificial, good or bad, positive or negative. This research is crucial in the realm of landscape architecture and all design professions, as one main
goal is to make successful places that people will utilize and appreciate. A designer’s job is to meet the needs of the people who will use the space as well as make important informed decisions on the issues in his or her area of expertise. In order to meet people’s needs, a designer must understand what amenities are needed, what qualities are preferred and what elements will contribute to the desired qualities.

Though the study of environmental psychology has been widely tested and researched, the relationship between design and human reactions vary greatly from person to person, design to design, and time to time. It is an inexact science, yet it has so many contributions when applied to design fields. Dak Kopec suggests that “[d]esign is highly contingent on social evolution, and scientific research into perceptions, preferences, interpretations, and worldviews must be constantly examined to provide designs that will be embraced by the general populace” (Kopec 2006). Research on this line of study and application of environmental psychology to the design professions will need continual testing as social views, cultural preferences, and public ideals change through time.

The field of Environmental Psychology as a whole studies the human-environment interaction in a very broad sense, however some theorists have focused their research towards subjects that can be applied to the study and evaluation of public parks. Theorists such as Abraham Maslow, who has studied the hierarchy of human needs, both basic and growth-based; and Rachel and Stephen Kaplan who have researched how humans establish preferences within the landscape, have valuable insight into how people and landscapes interact. This research can be further applied by designers in landscape architecture projects that meet certain human needs and incorporate characteristics that are, on a general level,
preferred. Maslow indicates that we, as humans, have lower, basic survival needs, and higher, more intellectual needs which we strive to attain if our lower needs are fulfilled. Kaplan and Kaplan, on the other hand, have researched what theoretical characteristics of the landscape help us establish a preference for one scene above another. Maslow’s hierarchy of need and Kaplan & Kaplan’s preference framework along with a few public life and urban form studies have become the base of my evaluation criteria.

While the environmental psychology research of Maslow and Kaplan & Kaplan have researched the physical characteristics that people prefer and need in their surroundings, the studies of Jan Gehl, William Whyte, and the Project for Public Spaces include the importance of sociability of public space in their studies, which is a critical aspect in the success of all public parks. The public space/public life researchers have studied public spaces intensively and have identified what successful public spaces provide for their users, how the physical and spatial characteristics have an effect on people using them, and how the presence and activity of other people alters the perception of a space.

1.2.2 Importance of Aesthetics and Maslow’s Hierarchy of Need

Abraham Maslow’s hierarchy of needs was originally formed into five tiers of motivational needs: physiological, safety, social, esteem, and self-actualization. His initial theory is that the bottom tiers of physiological and safety needs are basic human needs whereas the upper tiers such as esteem and self-actualization are the “higher needs” or “growth needs” that people aim to fulfill throughout their lifetime. Maslow’s original five-stage model included the following:
“1. Biological and Physiological needs: Air, food, drink, shelter, warmth, sex, sleep.


3. Love and Belongingness needs: Friendship, intimacy, affection and love, - from work group, family, friends, romantic relationships

4. Esteem needs: Achievement, mastery, independence, status, dominance, prestige, self-respect, and respect from others

5. Self-Actualization needs: Realizing personal potential, self-fulfillment, seeking personal growth and peak experiences” (McLeod 2014).

Maslow believed that in order for one to move up the ladder, the lower tiers must be fulfilled, yet other theorists have found this to be untrue. Edward Diener, author of the article “Needs and subjective well-being around the world” in the *Journal of Personality and Social Psychology*, states that “[a]lthough the most basic needs might get the most attention when you don’t have them, you don’t need to fulfill them in order to get benefits [from the others].’ Even when we are hungry, for instance, we can be happy with our friends” (McLeod 2014). The various needs work independently of each other, however it is perhaps easier to self-actualize when the lower tiers are already attained. Human instinct leads us to look to satisfy our higher needs once our basic needs are achieved.

Maslow’s original list was amended in the 1960s and 1970s to include seven, and eventually eight, tiers of motivational needs. The three added sections include cognitive needs, which include knowledge, meaning, etc.; aesthetic needs, which aim for appreciation and search for
beauty, balance, form, etc. in our surroundings; and transcendence, which involves helping others to achieve self-actualization (McLeod 2014). The addition of these three sections of the hierarchy strengthened Maslow’s initial model as the longing for knowledge, aesthetics, and aiding other people in their path to self-actualization are natural steps in human motivation. Fulfilling more tiers leads to optimal physical and psychological health. The additional tiers of the pyramid were placed within the existing pyramid, resulting in the following eight-stage model:

1. Biological and Physiological needs
2. Safety Needs
3. Love and Belongingness needs
4. Esteem needs: adding managerial responsibility
5. Cognitive needs
6. Aesthetic Needs
7. Self-actualization needs
8. Transcendence needs

This study will be incorporating the ideas associated with the aesthetic needs tier, as the purpose of designing post-industrial parks is, in part, about beautifying an abandoned site that will be used and appreciated by the public. Although works of landscape architecture fulfill some of the basic needs of people, the profession has a rich history of designers who have aspired to satisfy and support people’s higher needs as well as the lower tier needs. Designs such as Runnymede by Geoffrey Jellicoe, the Vietnam Memorial by Maya Lin, and the Diana Memorial by Kathryn Gustafson are powerful examples of landscape architecture creations that
impact the viewer on multiple levels; each place is a public open space in which people may freely move about, each tells an emotional story through its design, each acts on multiple senses to create an influential experience, and each caters to a person’s aesthetic needs in different ways. Through these characteristics, each example, and many landscape architecture works for that matter, fulfills multiple tiers of Maslow’s hierarchy of needs up to the aesthetic tier. Aesthetics may not seem like a significant human need, but the effects of an aesthetically pleasing environment are apparent when considering people’s psychological well-being. An aesthetically pleasing environment can improve mental health and create a comfortable place for people to live, work, and play. “Evidence [also] shows that aesthetics can be important in determining behavior” (Kopec 2006). Dak Kopec, in his book *Environmental Psychology for Design*, breaks down aesthetics into two categories: formal aesthetics and symbolic aesthetics, both of which can have an effect on the way in which people respond to specific characteristics in their environment.

Alfred Whitehead’s theory of major and minor beauty augments Maslow’s theory of aesthetic needs while also addressing the interconnection between beauty and coherence in the landscape (which is covered by Kaplan & Kaplan in the next section). Whitehead explains that minor beauty is a landscape or environment which lacks “discord or painful clash amongst the prehensions” (“prehensions” being either comprehension or apprehension] (Bell 1999). Major beauty, with the prerequisite condition that minor beauty is present, “involves one or more contrasts between the factors of perception, which provoke an intensity of feeling” (Bell 1999). Two factors, massiveness and intensity proper, have an effect on the intensive nature of these feelings. Whitehead explains the idea of massiveness as the “presence of a variety of
detail with effective contrast,“ and intensity proper as the “comparative magnitude (or scale), without reference to the variety of detail that gives massiveness” (Bell 1999). The natural and cultural patterns in our environment we find most attractive, according to this theory, combine both massiveness and intensity proper. He includes the factors of diversity and complexity (also addressed by Kaplan & Kaplan in the next section) in contributing to the characteristic of massiveness. This theory adds depth to Maslow’s more general theory for aesthetic needs by explaining that there are different levels of aesthetic quality, and there are certain characteristics that contribute to the degree of “beauty” we perceive. Whitehead’s research also provides a link between the theories of Maslow and of Kaplan & Kaplan with regard to beauty and preference in the landscape.

1.2.3 Environmental Preference and Kaplan & Kaplan’s Preference Framework

Rachel and Stephen Kaplan’s preference framework theory looks at what types of environments people prefer and what overall characteristics make them so desirable or preferable. The Kaplans point out that there are many variables associated with human preference such as prior experiences or knowledge, expectations, familiarity with certain types of environments, etc.; just as there are many variables in environmental psychology as a profession. Not all people are going to respond the same way to the same environment, yet this research’s results have been used and tested by many other environmental psychologists and theorists and has acted as a base for many other studies. The preference framework is categorized into two overarching classifications and sub-categorized into four main ideas (Kaplan 1982).
1. Involving
   a. Complexity
   b. Mystery
2. Making Sense
   a. Coherence
   b. Legibility

Involving

Involving environments include complexity or diversity, a variety of representations that draw one's attention and bring focus to them; and mystery or idea, a feature that is not physically present, but is implied. Both grab the attention of the viewer in differing ways and can become more familiar with time. Both categories may intrigue the observer in complimentary ways: complexity covers what is physically present in the frame of view and mystery covers what is out of sight and yet to be discovered.

 Complexity

Complexity refers to the variety and distinction of components providing a richness of information available when viewing the landscape. Complexity, as tested by Kaplan & Kaplan, is generally higher in urban environments and lower in natural settings whereas mystery is the opposite. There is a fine line in complexity between enough variety to keep the viewer interested and too much complexity that overwhelms the viewer.
Mystery

“Mystery is an indication that there is the possibility of exploring, or extending one’s cognitive map” (Kaplan 1982). This is not the element that initially draws people to a place, but it is what makes them want to come back and explore. The Kaplans express that the value of mystification or surprise in preferred landscapes comes when it is applied to the overall framework of the site. The space must be understandable as a whole with small pockets of “labyrinth” that allow the imagination to take over and fill in the blanks. There is danger in too much mystery within a landscape. If a person feels as if he or she may get disoriented or never fully understand the landscape, it will not end up being a preferred environment. “Complete chaos without hint of connection is never pleasurable” (Kaplan 1982). People like to be able to comprehend what is around them; familiarity often leads to preference. The idea of mystery can be compared to a puzzle; the initial confusion is part of the attraction, yet the satisfaction comes when we are able to construct the whole and understand the bigger picture.
Making Sense

Making sense of our environments requires coherence and legibility. Coherence is the way we organize our surroundings, and legibility looks at individual parts that combine to form a more complete depiction of the environment. This is one of the categories that is often difficult to measure because previous knowledge and experience comes into play when making sense of a particular landscape. One’s knowledge and expectations have an effect on how he or she will view a particular place. The Kaplans make a point to say that familiarity does not always equate to preference, but generally, we like what is familiar to us because we generally acquaint ourselves with places in which we enjoy and feel comfortable.

Coherence

Coherence is the information that we gather of our immediate surroundings to be able to “organize the field” and build a cognitive map of what we’re experiencing based on properties that are easily identifiable in any environment (Kaplan 1982). Coherence is often strengthened through time because familiarity can lead to higher levels of coherence. Another way in which
coherence can be established is if an object or form conforms to a stereotype to which the observer can relate the object to. Kaplan & Kaplan use the example of a typical American being able to spot a corner drugstore relatively easily whereas someone from a different culture or, in their example, a “Bushman,” may not find it so easily.

Defining or prominent features in a landscape can lead to a strong sense of coherence, even if the viewer cannot associate it with other, more common scenes, nor gain immediate familiarity with it. In this way, coherence is the way in which we take in new information to create a more extensive library of information from which we can establish coherence in future experiences.

Figure 1.2.3.3: Example of coherence: An example of a landscape with coherence through familiarity. Though this building is vacated and unmarked, our familiarity with the building form informs us that this is a former Pizza Hut establishment. (canona2200 2013).

Legibility

Legibility is the fourth and final part of the preference framework and considers the way in which people cognitively organize and understand what they’re experiencing. Kaplan and Kaplan have expanded on the past research of Kevin Lynch on legibility of the landscape. Lynch,
one of the originators of the theory of legibility, describes it as “the ease with which [a
landscape’s] parts can be recognized and can be organized into a coherent pattern” (Kaplan
1982). Though Lynch derived this theory in regard to urban domain and cityscapes, it equally
applies to other types of landscapes. It is about a person being confident that he or she will be
able to understand and manage the information he or she may encounter while moving
through an environment. The idea is closely associated with the culmination of our five senses
and how these provide us with a clear impression of our surroundings. Through limitations of
our senses, the future path within an environment may be uncertain, but if we’re lead to
believe that we will be able to comprehend what is ahead of us, it will encourage us to keep
going and strengthen our affection toward the place. This path example comes into play when
we think about an obstacle. “Going forward is easy; going backward is not. Moreover, ‘turning
back’ is psychologically unpleasant, since it suggests error and defeat” (Tuan 1974). The same
can be said if one experiences an unpleasant surprise due to the lack of legibility in the
environment. If that person is able to identify and sequentially categorize the elements within
the landscape and piece together the information to form a whole, the landscape has good
legibility. On the other hand, if each piece of the sequence, while moving through, is vastly
different and disconnected, resulting in an incoherent overall vision or personal disorientation,
the landscape lacks legibility. A composite picture of our relative environment is the main focus
in legibility, as nothing is experienced in isolation; “. . .but always in relation to its surroundings,
the sequences of events leading up to it, the memory of past experiences” (Kaplan 1982).

Though all the senses play a role in our overall experience, legibility of the landscape is a
“visual characteristic” of our surroundings; Lynch explains that vision is a composite picture of
what all the senses are experiencing at any one point. “A good environmental image gives its possessor an important sense of emotional security. He can establish [an] harmonious relationship between himself and the outside world. This is the obverse of the fear that comes with disorientation” (Kaplan 1982).

Lynch breaks down legibility into five main categories:

1. Paths:
   “Paths ‘are the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads’” (UrbanXtra n.d.).

2. Edges
   - “Edges ‘are the linear elements not used or considered as paths by the observer. They are boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls ... ‘(UrbanXtra n.d.).

3. Districts
   - “Districts ‘are medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of," and which are [recognizable] as having some common identifying character ...’” (UrbanXtra n.d.).
   - Districts are the largest of the elements to legibility
   - “Districts are structured with nodes, defined, by edges, penetrated by paths, and sprinkled with landmarks” (Kopec 2006).

4. Nodes
“Nodes ‘are points, the strategic spots in a city into which an observer can enter, and which are intensive foci to and from which he is travelling. They may be primary junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or the nodes may be simply concentrations, which gain their importance from being the condensation of some use or physical character, as a street-corner hangout or an enclosed square ...” (UrbanXtra n.d.).

5. Landmarks

“Landmarks ‘are another type of point-reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store, or mountain” (UrbanXtra n.d.).

1.2.4 Importance of sociability in public places

Jan Gehl has studied the physical characteristics of humans, our perception of space and social distances, humans’ natural social tendencies, and how scales in our environment affect our perceptions of a space. Though he looks at these ideas in the context of city streets, these concepts can easily be applied to public parks, as they are public spaces that attract and provide for people similar ways.

Gehl talks about how we are “linear, frontal, horizontal” beings, establishing the base of how we begin to sense our surroundings. Our natural form of movement is forward walking; being on foot exposes humans to many more sensorial experiences that go unnoticed if we take other forms of transportation. The social and recreational opportunities are abundant in public
spaces where we can be near other people. Both Gehl and William Whyte express the importance of other people within a space. Gehl reiterates an old Icelandic poem which states that “man is man’s greatest joy.” Our interest in and comfort around other people is undeniable. Whyte supports this in his studies; “more successful places have more groups of people in twos and threes than less successful ones.” Successful places also have the highest number of individuals. If individuals are able to feel safe, comfortable, and entertained in a public space, it signifies a highly active and stimulating place. He also points out that “people looking at other people” is the number one activity in public spaces because, as humans, we love to see other people walk, talk, interact, entertain, eat, and occupy a space (Whyte 1988).

Scale, distance, and perception are characteristics that directly affect people’s perception of the social realm. Gehl breaks down visual social distances into a few categories: distances from which we can identify that a human is a human; distances in which we can recognize body movement, gender, and age; distances in which we can read facial expressions; and intimate or personal distances. These can be categorized into social distances of “public distance” (more than 12 feet), “social distance” (4-12 feet), “personal distance” (18 inches to 4 feet), and “intimate distance” (0-18 inches). These distances may also be considered with regard to sound, either way allowing different types of interactions to happen at these varying distances.

Places that are rich in variation are often more successful because the level of visual and sensorial stimulation is high, more easily keeping people’s attention and encouraging them to continue exploring the space. In the context of a city, this relates to the variation in ground floor facades, however in a public park this can relate to the number of elements in one’s view, the change in materiality of present elements, the rhythm or pattern of a particular
component, the number of people present, or the activities in which people are taking part, among other characteristics. Visual variation as well as aesthetics provide important layers to a space. According to Gehl, “for people walking through the city, beautiful space, carefully planned details and genuine materials provide valuable experiences on their own merits and as a valuable extra layer to the other qualities the city has to offer” (Gehl 2010). The same can be said about all public spaces, and even more so for parks since they may not contain all the stimulating elements that a city street might. Aesthetics are a powerful reason for people to visit, stay, and return to a park.

Whyte touches on how people’s perceptions of spaces may contradict the actual atmosphere of the place. He uses Paley Park as an example: a very small pocket park in the middle of New York City. The space is generally crowded with people, relatively loud, and highly trafficked, however people perceive the space as a quiet, secluded getaway from the busy New York streets. Due to the materiality, the type of use, and the comfort of other people in the space, it is perceived as a refuge in the city (Whyte 1988).

Many of the concepts addressed by both Maslow and Kaplan & Kaplan are also addressed by these researchers who study the sociability of the spaces, supporting the importance of spatial and physical characteristics, yet addressing the importance of social and symbolic qualities within a space in their overall appreciation and success.
1.3 Developing Preferences

“Perception is not a passive process of registration, but an active process of interaction between organisms and environment” (Kaplan 1982). Each of these interactions may have a different impact on the organism; “the greater the impact of information from the environment, the greater the likelihood of being aware of it” (Kaplan 1982). We actively generate preferences through our history of reacting to our environment throughout our lives. Through our five senses we are able to assess our environment to determine and address our basic and higher needs; understand complexity, mystery, coherence, and legibility in the landscape, even if we do not consciously do it; and most importantly, interact with our surroundings and develop our own unique view on the environment.

Kaplan and Kaplan, though they explain perception through the lens of personal survival in an uncertain environment, describe the relationship between the speed and accuracy of perception as a trade-off, or opposing goals: “one can only be had at the expense of the other. . . increasing one with decrease the other” (Kaplan 1982). On a typical day, when our lives are not in danger, speed of perception is arguably not as important as accuracy. The speed of perception, does however, indicate the level of legibility of the landscape. If a person is able to perceive and understand the landscape quickly, the landscape is likely to be organized in a way that results in a legible space. As humans, we have an innate desire for familiarity, clarity, and elements that are easily identifiable because “strange objects. . .[often] invoke fear” (Kaplan 38). The Kaplans also point out that the environment, though uncertain, is not random. There are similarities within all environments, yet it is up to the organism to identify them.
Perception is not only about a glimpse of a scene; it can include any and all previous knowledge about or affection for a certain environment before entering. “Past experience can enhance the value of a limited glimpse of the environment” (Kaplan 1982). Hurried perceptions without any previous knowledge or experience of an object or place can result in an incorrect assumption, which is what the Kaplans deem as one of the problems with perception. As a general goal of perception, we aim to find environments that are stable, familiar, and clearly identifiable, all leading back to the idea of legibility in the landscape.

1.4 Role of the Senses

When evaluating reactions to and perceptions of our environments, it is imperative to study the sensory aspects of the body; our senses, when stimulated, initiate emotional responses, and these responses, along with our understanding and memories of a place combine to form a specific perception about our surroundings. It is important to realize that not all senses are equal in connecting an individual to the landscape; each sense provides us with different information that, when interacting together, orients us and allows us to make sense of the surrounding space. “The senses, when acting alone, provide different phenomenal worlds from the one yielded when they act together” (Kaplan 1982). Strong emotional responses are brought about through the culmination of all the senses, creating a rich and memorable experience. For a landscape to be seen as successful, it must cater to more than just one or two senses; Yi-Fu Tuan quotes Sir Kenneth Clark, an art historian, who said, “‘I fancy that one cannot enjoy a pure aesthetic sensation (so-called) for longer than one can enjoy the smell of an orange, which in my case is less than two minutes.’ To attend to a great work of art for
longer than that knowledge of historical criticism has value for it keeps one’s attention fixed on
the work while the senses have time to get a second wind” (Tuan 1974). Simply seeing is not
fully experiencing. Tuan also clarifies that the historical and cultural importance of a landscape
is important to retain the attention of the visitor once the initial attraction has expired. Our
five senses are used to connect us to the world in multiple ways; all are received uniquely and
each diversely affects the rest of our bodies. Some of our senses are active and integrating,
while others can be passive and isolated, causing some senses to be more impactful when
evaluating their acquisition of the designed landscape.

From an environmental psychology perspective, stimulation theories are those that directly
include the role of the senses. Stimulation theories “serve to conceptualize and explain the
environment as a source of sensory information derived from sight, sound, touch, taste, and
smell” (Kopec 2006). Arousal, environmental load, and adaption are the environmental
psychology terms that explain how our senses aid in perceiving of our surroundings. Another
theory stemming from the research of James Russell, Albert Mehrabian, and other theorists
“indicate[s] that the emotional impact of an environment is systematically related to behavior
in it” (Kopec 2006). Not only do the physical elements have an effect on our affection toward a
place, but the program and activity done within the spaces do as well.

A composite gathering of stimuli from all our senses results in an overall sensory perception
of our surrounding. Sensory perceptions which lead to emotional responses are extremely
important when considering the overall success of a landscape. A person’s emotional response
to a site can be much more powerful than any quantifiable or concrete data because an
emotional response can permanently connect us to a place. In this way, gauging the success of
a place with regard to an individual’s preference can end in an extremely subjective conclusion, however an individual’s responses can be associated with physical elements within the landscape, recognized through our senses. Our senses allow us to relate to and make sense of our surroundings.

**Sight**

Sight is a matchless sense with regard to detail and total amount of information, yet it has its limitations, spatially and emotionally. “According to information theory, sight is prioritized over the other senses because the amount of information that flows into our brains from sight is ten times [higher] than the information from touch, the second highest information contributor to the brain” (Mascorro 2014). Sight is a crucial sense in creating strong connections with a place due to the precise picture in which we see. Though our dependency on sight is criticized in many theoretical writings, there are justifiable arguments as to why this sense is remarkably important. The eye is the sense that instantly satisfies and connects us to a place. It relates us to objects around us, informs us what to expect when we touch an object, warns us of possible danger, shows us life and movement, allows us to sense light, instructs our paths of movement, and emotionally attaches us to a place. The precision and distance in which we can perceive through sight is vital in our technological-driven culture. The world’s focus has continually been shifting towards this aesthetic ideal that aims to please the “privileged” sense of sight, since it has proved to be a vital selling point of most products, regardless of the scale or use. Architecture, art, perfectly green mown lawns, manicured
vegetation, city infrastructure, store fronts, technology: all these elements that make up our modern cities are often meant to be visually pleasing.

Though it is generally our most valued sense, seeing does not actively engage multiple parts of the body as our other senses do. “Seeing is analytical and reflective. . .” (Feld n.d.). Sight can fail to integrate us fully with our surroundings, particularly when we feel extremely emotionally invested. Pallasmaa states that during “overpowering emotional experiences, we tend to close off the distancing sense of vision; we close our eyes when dreaming, listening to music, or caressing our beloved ones” (Pallasmaa 1996). Without the sense of sight, our other senses that make strong emotional ties are heightened. Yi-Fu Tuan addresses how there can be a lack of emotional connection through sight. Sight can be perceived while the body is physically separated from reality: “Seeing does not involve our emotions deeply. We can see through the window of an air-conditioned bus that the slum is ugly and undesirable, but how undesirable reaches us with pungent force only when we open the window and catch a whiff from the malodorous sewers” (Tuan 1974). Sight displays but does not demonstrate. Our western thinking and technology has made this detachment possible; cars, tall buildings, televisions, and urban sprawl, among many other examples, encourages living a life behind a clean, safe, transparent barrier. Mirko Zardini explains that as more emphasis on design is pleasing to the eye, our cities have become more sanitized, removing all extraneous dirt and endemic sounds and smells, which shape the identity and character of a place. “This dual preoccupation with the visual and the ‘hygienic‘ has been a constant factor in the shaping of attitudes toward the modern city, and it persists today” (Zardini 2012).
Though designing for visual aesthetics may, in some cases, “sanitize” our environments, it is a very important factor to consider when properly designing. Since sight is such a prominent way in which we perceive beauty, the visual aspect of every design must indulge the viewer. Sight also has a significant effect on the legibility of the landscape since familiarity and clarity are “mainly visual characteristic[s] of a landscape” (Kaplan & Ryan 1998). Elizabeth Meyer, though talking particularly about sustainable landscapes, emphasizes the importance of aesthetics in the landscape. “. . .the concern for beauty and aesthetics is necessary for sustainable design if it is to have a significant cultural impact” (Meyers 2008). People respond to and appreciate beautiful sights since we are creative and opinionated beings. A beautiful and functional landscape can have a positive effect on the culture of that place for decades or even centuries after being built because people are attracted to spaces that please the eye.

**Sound**

Vibrations, reverberations, diffusion of, and directionality of sound make the auditory sense fundamental in spatially orienting ourselves. Steven Feld states “If, ‘. . .in perceiving, our whole body vibrates in unison with the stimulus. . .[then] hearing is, like all sense perception, a way of seizing reality with all our body, including our bones and viscera’” (Feld n.d.). Our impression of sound incorporates the “brain, nervous system, head, ear, chest, muscles, respiration, and breathing” (Feld n.d.), creating a sense that physically engages most of our body, thus allowing us to be more in touch with our surroundings. Feld states that while sight provides a immense amount of information, sound is more able to emotionally move a person. This emotional connection through sound can be observed as music brings tears to one’s eyes, as sounds of
crickets and wind blowing through the trees reminds one of life, and when the lack of sound affects the experience of an event. “When the soundtrack is removed from a film. . .the scene loses its plasticity and sense of continuity and life” (Meyer 2008). Reverberation of sound is directly correlated to time, enclosure, and sound absorption. When one is in an open field, sound waves disappear into the distance over an expanse of time; but when in an enclosed area reverberations return to the ear quickly, making one fully aware of space, distance, and amount of enclosure. Feld explains how sound shapes the way in which we interpret the experiences of our surroundings. “. . .[S]onic presence and awareness [are] potent shaping forces in how people make sense of experiences. The experience of place potentially can always be grounded in an acoustic dimension” (Feld n.d.). Memory also plays an important role in how we react to sound; we unconsciously associate sounds with specific locations every day.

The sense of sound attached to a landscape is not only what the landscape physically provides, but what it brings to the site. Vegetation and water attracts birds, squirrels, insects, people, and other living organisms; their sounds add to the character of the site, and those visiting open spaces and parks tend to desire the sounds of nature. Sound can be used in unique ways to intrigue or inform a visitor. Hollow and unabsorbed sound waves can be perceived as cold and harsh while more absorbed resounding waves can be comforting and mitigating. These differences between absorption rates are often part of the designer’s intent of a site to reinforce an idea or create a certain atmosphere. Accepted noise levels and types are truly particular to the use of the site; highly urban spaces are filled with street noise, yet it is accepted and appreciated as it adds character to the space. Private gardens, on the other hand, are expected to be serene and quiet to encourage contemplation and relaxation. When
designing, a landscape architect must consider the site’s use, its location, its cultural identity, and its user groups when deciphering how sound should play a part in the experience.

**Smell**

Our sense of smell is essential in relating one’s self to a place; we use the spatial qualities of an area around us to describe and associate smells. “We can smell more than ten thousand different scents” (Mascorro 2014), which combine to form distinct sensations that become memorable and associated with specific places. One may describe the smell of a rose garden as simply the smell of the flower, but contributing scents include bark, lawn, fertilizer, animals, water, an old wooden bench, the people using the garden, and the scents carried by the breeze. So even though there are many odors combined together, a person would associate the mixture with the space’s main character: in this case a “rose garden smell.” “The nose makes the eyes remember” (Mascorro 2014). The sense of smell’s most significant contribution to evoking emotion is its ability to conjure memory. It is said that when our senses react to stimuli, it brings about hundreds or thousands of memories, making every single person’s experience of a place truly unique. Humans bring their experiences and memories everywhere they go, and these factors greatly influence the way in which they sense their surroundings. Smell is often our least conscious sense since there are millions of varying scents even in everyday life, yet it is our most underestimated sense. One scent can bring back memories instantly – the aroma of a grandmother’s cooking, the scent of a mother’s garden, the smells of a family farm, the smell of motor oil in the city, the fragrance of a country’s signature spice – a
single smell can bring a person back to a special place and time in his or her past. This memory-recalling capacity defines the strength of this sense.

**Touch**

The sense of touch is an obvious intimate connecting point between an individual and the landscape. “The sense of touch is the tool to provide information of texture, weight, density, and temperature” (Mascorro 2014). If an object or element is close enough to touch, one is undoubtedly immersed in the setting and is most likely able to experience the space through multiple senses. This tactile sense, along with sight and sound, allow us to fully perceive distance and enclosure. Associations between these three senses provide a strong influence on an individual’s emotional impression of a place. If we are able to see, hear, and touch objects surrounding us, we can accurately judge our comfort within, attraction to, and attachment to a space.

In most landscapes, touch is vital in fully understanding a site. Landscapes are often seen as curative and relaxing, and their power can be seen in therapeutic or healing gardens. The physical proximity to living plants and the natural environment is essential in retaining a healthy mental state; therapeutic gardens encourage this intimacy with nature and “[provide] a sense of fascination as well as a greater extent, separating users from distraction, reducing negative emotions, holding a person’s attention, and blocking stressful thoughts” (Severtsen n.d.).

The Kaplans consider touch as a “commerce with many objects...[we] handle them according to their sizes, shapes, distances, or movements if our locomotion and manipulation are appropriate” (Kaplan & Ryan 1998). In meeting our needs, we must come into physical
contact with our surroundings, and in doing so, we relate ourselves to the objects directly around us.

**Taste**

“Olfaction, the system that is responsible for the sense of smell, amplifies the sense of taste” (Mascorro 2014), and similar to the sense of smell, taste is also a sense that is greatly tied to and dependent on memory, whether it's referencing a past memory or creating a new one. This memory-inducing characteristic that allows us to access a past memory through our Olfactory System, known as the “Proustian” experience. A Proustian experience has the power to bring a person back to a vivid memory through one simple smell or taste. Stuart Firestein explains that smells always lead us back to important, personal experiences such as “. . . grandma’s living room, the first day of school” (Firestein 2010). Even though the senses of taste and smell may not always be directly engaged with the landscape, they can influence the memories made and appreciation of a place. Food and drink are the obvious sources of taste within a landscape; trying the food of a new place can connect us to that culture as well as spark curiosity.

Since taste is tied to creating strong memories, taking time to sit down and eat within a landscape, particularly in an unfamiliar space, can create a unique attachment to the place because it gives our other senses more time to receive information. This extra time spent perceiving the space can allow the taste sensations to forever be tied to that particular place which, in turn, gives us a unique emotional connection.
Chapter 2

Methods

2.1 Case Study Research

In order to directly apply theories of environmental psychology to post-industrial public parks, a set of evaluative criteria was created based on the theories of environmental psychology researched in the Literature Review. There is great importance in on-site case study research for this type of study in order to accurately evaluate each place because parks are dynamic and changing places that cannot be evaluated through pictures or descriptions alone. There is a tremendous difference between looking at an image and physically experiencing a landscape, though there is a misconception that a landscape painting or image is equal to aesthetic experience. As Simon Bell explains, the issue with using images for landscape evaluations is that they are a snapshot of a single place at a single point in time with a single point of view. Images do not show the larger context and do not engage our other senses, and as researched in the literature review, our senses have a significant impact on our perceptions of spaces. Cheryl Foster includes that “[T]hroughout our lives we constantly use our sense to perceive the landscape of which we are part” (Bell 1999). These perceptions combine to form specific sensations which we find either pleasant or unpleasant, and from these sensations, we can form our individual opinion of beauty or aesthetic appreciation. Much more information is available to the viewer when he or she is actively engaging with the landscape because
aesthetics “involves the other senses” (Bell 1999). With true aesthetic experience, a human becomes “blended or becomes one with the landscape” (Bell 1999).

The value of case study research has been described by authors such as Blaxter, Berg, and Bell in which they explain that case studies can “allow researchers to undertake in-depth, detailed investigations within a limited time-frame” (Smith 2005). It allows a researcher to assess sites side by side; to evaluate the same elements in each site and more easily compare the results of the study. Because this study did not survey the visitors, workers, or designers of these sites, on-site evaluations were critical in being able to evaluate how people interact with the sites. Humans’ interactions with their surroundings cannot be assessed through pictures or current written documents as images do not show these types of interactions and there is currently no such research on aesthetic responses to post-industrial landscapes. The on-site evaluations performed allowed close observation and documentation of the actions and behaviors of people in relation to each site and the elements within the site. Visiting and analyzing multiple case studies allowed me to closely compare three very different sites under the same criteria in a short period of time.

2.2 Creation of Case Study Evaluation

2.2.1 Long –Form Narrative Structure

There are many types and forms that evaluation criteria may take, but for the use of this research, the most applicable form is a long-form narrative. This form of evaluation is a more honest approach to assessment of aesthetic responses as it takes more variables into account.
and does not deem a space unsuccessful because of the absence or failure of one element or another. A narrative approach is more in depth and accurate with regard to looking at all the elements within a space as it does not rely on a rating or scale to evaluate each one’s success. It also allows the assessor to explain or justify the analysis.

A narrative evaluation provides this research with a richer, more robust analysis since many variables in this study may have lessened the validity of a checklist or rating system. A checklist is difficult to justify in the evaluation of parks because these landscapes have various functions, they adapt to who uses them, they are shaped by their surrounding fabric and cultural needs, and the presence or absence of an experiential element does not necessarily deem a park successful or unsuccessful. There is also the variable of environmental psychology and aesthetic responses being an inexact science and somewhat subjective matter. All landscapes are changing, and all people are different which makes a fixed evaluation seem inadequate.

Some of the drawbacks to using a long-form narrative relate to time, replication efficiency, and quantification. These kinds of systems are more difficult to replicate over large samples because of the time it takes to produce thorough written analyses. These are not quantitative analyses, so they are a bit more difficult to compare side-by-side to determine which is better or worse, however the qualitative nature of landscapes and public space make this type of evaluation more applicable. Though these are drawbacks to using a long-form narrative, the focus of this study was not to evaluate as many sites as possible. The focus was to obtain a rich, qualitative measure of a few sites to begin the examination on how post-industrial sites are performing with regard to aesthetic responses and aesthetic experiences.
Though a checklist or rating system could have been generated for this research, it can easily be argued that neither would prove accurate in depicting how successful a post-industrial public park is in providing for the aesthetic and higher needs of those visiting and using it. These types of evaluations are very successful in quickly receiving and comparing many points of view, however that was not the intent of this study. Ordinal and ranking scales forces the evaluation criteria to be more pointed and focused, but given the incredibly diverse range of elements and human variables in post-industrial parks, this type of assessment would not contain sufficient information. A quantitative study is not an appropriate form as the qualitative characteristics are much more telling and important in this research.

2.2.2 Other forms of Evaluative Research

There have been various researchers within the field of landscape architecture and environmental psychology who have used a rating scale and/or checklist to evaluate their research, so to say that these types of evaluations are invalid within these fields of study would be false. This being said, they apply to types of research that have fewer dependent variables and less focus on qualitative evaluation than this study does.

Checklists are applicable when the presence/absence and/or quantity of different elements have a direct effect on the overall outcome. In these scenarios, the number of check marks corresponds to a classification of “better” or “worse,” resulting in a more quantitative study. It deals with presence or absence, not quality or value of each element. In his book “Sustainable Communities,” Hugh Barton created a checklist to evaluate the various sustainable strategies that are used by eco-neighborhoods in his study. He used this checklist to see what were the
most widely used strategies and why those each strategies were chosen to create a more eco-friendly neighborhood. He does address the possible error that this checklist creates through simplification of these different approaches; although fewer check marks means a neighborhood’s performance is “worse” and more check marks means a neighborhood’s performance is “better,” the context of each neighborhood is a significant factor in their overall performance and success of that strategy.

Rating systems can deal with qualitative attributes, but the qualities must be able to be categorized into specific evaluative groups. These analyses often work on a scale of very poor, poor, average, good, very good (or some rating of the sort). They cannot explain that if an element is, in theory, “poor” but is essential to the success of a place (for example: Rebar from within a weathered piece of concrete is showing. From a material condition standpoint, it is poor, but from a site character standpoint, it is important and intriguing). One example of a research study in which a rating system is appropriate is Dak Kopec’s Formal Aesthetics Survey where he rates thirteen characteristics on a scale from 1-5 (1 being the lowest and 5 being the highest score). Using his ratings, a score over 65 means that a room is considered "beautiful," a score close to 39 is "average," and a score of less than 39 is "unattractive." While he uses a numeric rating system, Kopec addresses the conditional and subjective nature of what he is studying (Kopec 2006).

2.2.3 Process of Creating Evaluation Criteria

These evaluation criteria combine ideas from multiple different theories, categorizations, and existing evaluations to create a comprehensive list that looks at how post-industrial sites
perform. Using the theories and research of Maslow, Kaplan and Kaplan, Project for Public Spaces, and Whyte, a set of categories was created that sought to address these specific ideas: what higher aesthetic needs are met, what elements affect how a person perceives a space and how a person may develop a preference for it, and what makes a successful public space. Some of the categories directly line up with criteria from existing evaluation forms such as Kopec’s Formal Aesthetics survey while others were derived through an understanding of the other theories of environmental psychology, landscape architecture, and human behavior in social settings. Through the literature review, an understanding and synthesis of this material led to the creation of a list of elements to observe and document on site that would provide a thorough analysis of the site with regard to these theoretical ideas.

From the formation of the list stated above, individual elements were categorized into broader qualitative classifications: spatial, physical, social, and symbolic qualities. Figure 2.2.3.1 shows the process of combining, organizing, and classifying all the information from the literature review, and Table 2.2.3.1 shows the final classifications of features and the features that each theorist/researcher addressed.
In this section, each category in the evaluation criteria will be defined and its relevance to this study explained through the theories explored in the literature review.

The process of forming the criteria set resulted in the following final evaluation criteria:

**Table 2.2.3.1**

<table>
<thead>
<tr>
<th>Features</th>
<th>Aesthetic needs</th>
<th>Preference Framework</th>
<th>Good Public Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPATIAL</strong></td>
<td>Coherence</td>
<td>Legibility</td>
<td>Complexity</td>
</tr>
<tr>
<td>Defining the Space</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Proportions/Dimensions</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Scale (of elements)</td>
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<td>✓</td>
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<tr>
<td>Amount of Enclosure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Natural Light</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Artificial Light</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>SOCIAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Function</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Movement through Space</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociability of Space</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHYSICAL</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Materials (Characteristics)</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Physical Amenities</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>SYMBOLIC</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historic Use</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Order</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Comfort &amp; image</td>
<td>✓</td>
<td>✓</td>
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Spatial Qualities:
1. Spatial Definition
2. Amount of Enclosure
3. Proportions
4. Scale (of elements within the space)
5. Natural Light
6. Artificial Light

Physical Qualities:
7. Materials (including their condition)
8. Physical Amenities

Social Qualities:
9. Current Function
10. Sociability of the Space
11. Movement through the Space

Symbolic Qualities:
12. Historic Use
13. Order
14. Comfort & Image

Before evaluating any site, the site must be broken down into sub-spaces or "character" areas (spaces that are either physically separated from other areas or separated by certain characteristics).

2.3.1 Spatial Qualities

Spatial qualities are those which can be perceived mainly through sight and sound that, as the name suggests, deal with what elements form the space being evaluated and what
elements *influence our perception* of that space. The ideas of spatial qualities are addressed by Maslow, Kaplan & Kaplan, Whyte, Gehl, and PPS.

1. **Spatial Definition**

What elements define the space? What defines its boundaries?

By defining the space, the evaluator narrows the focus of the area to one with the same types of characteristics. This definition of space can concentrate on the physical elements that separate the space from another space such as walls, fences, water bodies, etc.; or it can focus on the characteristics of the site such as type of use, overall feeling, or spatial character. It is important to determine these spaces as it will and narrow the study to a manageable area and avoid and "averaged" evaluation of the site. Each character area should have different spatial, physical, symbolic, and/or social qualities from each other.

The concept of a “defined space” has different effects on human perceptions. Though spatial definition and amount of enclosure have many similarities, they differ in that spatial definition addresses the physical spatial characteristics while amount of enclosure is a psychological perception of space.
Figure 2.3.1.1: Example of a space distinctly defined by three full walls.

Figure 2.3.1.2: Example of a space with extremely little definition. A few patches of vegetation give this otherwise open field a small amount of definition, and with that, a sense of scale.
Figure 2.3.1.3: Example of how to diagram the delineated space in plan view.

Figure 2.3.1.4: Example of how to document the delineation of spaces on site. These diagrams explore the relationship between spaces as well as approximate sizes and location in the context of the whole park.
2. Amount of Enclosure

The amount of enclosure can be associated with proportions and what defines the space. First, is this space an open, enclosed, or partially enclosed space? What elements give it a sense of enclosure? Does the space feel large or small? Do the physical proportions give it the sense of enclosure?

"Enclosure is the relationship between volumetric space and human scale" (Condon 2002). Patrick Condon defines and illustrates the importance of enclosure. He points out that people like to feel as if they’ve arrived when entering a designed landscape; they appreciate defined “rooms,” and generally want to stay longer if the space displays these characteristics. Visitors respond well to defined spaces that relate to their body size in some way, making enclosure an important factor to consider. Spaces that have no boundaries may bring about feelings of uneasiness and vulnerability (Condon 2002). Our perception of enclosure and space relates mainly to our senses of sight, sound, and touch, and is aligned closely with the perception of scale. “‘Open’ and ‘enclosed’ are spatial categories meaningful to many people. Agoraphobia and claustrophobia describe pathological states, but open and enclosed spaces can also stimulate topophilic feelings. Open space signifies freedom, the promise of adventure, light, the public realm, formal and unchanging beauty; enclosed space signifies the cozy security of the womb, privacy, darkness, biologic life” (Tuan 1974).
3. Proportions

Proportions can be defined as the ratio between height, width, and depth.
They have a unique effect on humans' perceptions of space. "Human scale" is a term that is particularly applicable to landscape architecture and the built world as it refers to proportions of objects in the landscape in relation to the human body. In addressing the idea of structures in relation to human scale, designers are able to determine what ratios of vertical to horizontal lengths create a comfortable environment for the general public, though these ratios may fluctuate due to the specific intent of the designer and use of the space. According to the Great Streets Initiative of St. Louis, a comfortable and successful vertical to horizontal ratio has been found to be between 3:1 and 1:4. Above a 3:1 ratio, a person can start to feel claustrophobic and uncomfortable, whereas a 1:4 ratio begins to spread the pedestrian space beyond a socially interactive setting. Yi-Fu Tuan explains proportions in a more whimsical way, saying that "vertical elements in the landscape evoke a sense of striving, a defiance of gravity, while the horizontal elements call to mind acceptance and rest" (Tuan 1974). These variables make us feel different about spaces with these different proportional characteristics making proportions an important category of spatial characteristics to consider.
Figure 2.3.1.8: Example of how to document the proportions of a space. Using the smallest dimension as the base dimension, the proportional ratio would read 1:1.2:5.4 (WxHxL)

Figure 2.3.1.9 and Figure 2.3.1.10: Examples of documenting proportions of a space on-site using pacing measurements and approximate measurements.
4. Scale of Elements within a Space

Do the elements appear to be in balance with the surroundings/space? Do they seem too large or small?

Scale has a unique quality in its ability to make a person feel large or small within a space. Scale is related to proportions, but deals more with the human body as the base relation. Feeling large comes about if all the elements in a space are small in relation to the human body. The opposite happens when the elements are much larger than the human body; we feel small, and often vulnerable. These two opposite qualities can be tactically used in design bring about certain perceptions or reactions.

Figure 2.3.1.11: Example of large scale elements within a space. The massive lighting structures exaggerate the contrast between human scale and structure scale. (Schouwburgplein n.d.)
5. Natural Light

How much natural light is allowed into the space? How does it change the atmosphere/feeling of the space?

Natural light is an extremely important factor when considering not only public outdoor spaces, but all spaces. Kopec lists the presence and quality of light as an important factor in all types of design: residential environments, medical facilities, libraries, offices, educational facilities, etc. because light has an overall positive effect on humans. Natural light should not be equated with direct sunlight though. In his pedestrian behavior study, William Whyte states that, though "during some months, the use of a space can correlate with the sun, the presence of light is more important than the presence of direct sun." There is also a correlation between light and spatial qualities. Carmina Gheorghita explains the correlation between light and space that can be applied to both natural and artificial light. "In outdoor spaces, low light levels give a
cozy and friendly ambiance, while in closed spaces, brightness could increase the perception of space and generate comfort" (Gheorghita, Grigorvischi & Ciolacu-Miron 2014).

Figure 2.3.1.13 and Figure 2.3.1.14: Example of spaces with low levels of light (left) and filtered light (right).

Figure 2.3.1.15: Example of high levels of natural light.

6. Artificial Light

This category is generally applied to the space at night: Is the space lit at night? Is there special lighting? How does the space transform at night due to artificial lighting? Is the space meant to be used at night?
Artificial light may be broken down into two sub-categories: artificial light used as a focal point or attraction and artificial light as general space lighting. In this first instance, colors are a significant factor in its effect on people. Gheorghita explains how colors and the fashion in which they change have varying influences on human perceptions of them. "[C]hanging colors attracts people. It creat[es] curiosity, fantasy, and fun, but slow color changes are more comfortable for people and are more like natural light" (Gheorghita, Grigorvischi & Ciolacu-Miron 2014). She continues by explaining how various colors affect us in different ways: reds tend to make us more uncomfortable while blues induce a more lighthearted feeling.

Figure 2.3.1.16 and Figure 2.3.1.17: Examples of spaces where light is used as an attraction.
2.3.2 Physical Qualities

Physical qualities are initially sight- and needs-based, though the characteristics that are absorbed by the other senses often have the most significant impact. This category looks into what elements are physically there, how they provide for people, and how they influence the overall impression of the space.

7. Materials & Condition of Materials

Looking at the materials within a site is more than simply stating what is present. This section looks into each material's properties and characteristics. What are the materials? Does this material have hard or soft characteristics? How do the texture/color/brilliance/proximity/condition affect the space's impression as a whole?

Instead of looking at the way in which elements create space, this category looks at the physical make-up of those elements because the materiality has a significant effect on our
perceptions of a space. A 20'x20' space surrounded by thick vegetation feels much different than one surrounded by concrete walls.

Hard and Soft Materials: Hard materials include concrete, metals, stone, asphalt, hard paving, glass, wood (depending on context). Soft Materials include vegetation, soft paving (i.e. some types of gravel, woodchips, sand), water, wood (in most cases).

- **Soft Materials**: The presence of more soft materials is often associated with higher preference according to Kaplan and Kaplan's studies on scene preference. The Kaplans focus on the presence of trees as important factor in the landscape because trees reflect changes in seasons and growth, can create space when in relation to other trees or objects, provide shade and shelter, give the landscape form, can act as landmarks, and often significantly contribute to the appreciation of a place (Kaplan & Ryan 1998). Water is also a material of considerable significance. As humans, we connect with this material more deeply than arguably any other material. It is vital for life and is a sign of cleanliness, so we are attracted to waters that display "transparency, purity, and clarity" (Yglesias 2014). Caren Yglesias goes on to explain why we are so attached to the substance. "Water has indeterminate form and it virtually colorless, odorless, and tasteless...yet it is felt wet with discernable sensations of temperature" (Yglesias 2014). Its reflective qualities are another reason we, as people, are so attracted to it; as Maslow explains our deep human need for balance and symmetry, water provides the reflection, and therefore symmetry, of every object it reflects.

- **Hard Materials**: can have very different characteristics depending on the material. These are usually associated with being made by man. Hard materials have historically
been a medium in which humans have been able to exercise their handiwork/artfulness/creativity, but also provide necessary structure for human needs.

Figure 2.3.2.1 and Figure 2.3.2.2: Example of Hard and Soft Materials. The left image highlights the hard materials: decomposed granite path and concrete wall (1 & 2). The right image highlights the soft materials: Wood chips, vegetation, and wooden fence (3, 4, & 5).

Texture: Texture affects our perceptions of depth. If large textures are close and small textures are far, it increases the perception of depth. This tactic has been perfected in Japanese gardens, mainly due to their small size. Increasing the sense of depth in a small space makes it appear larger than it is. If textures are in the opposite placement, it decreases the perception of depth, making a space appear smaller. Both these techniques can be used by designers to attain the desired effect.

Color: Color affects multiple variables: arousal, depth, size, and comfort. Reds and yellows are more arousing and display higher anxiety levels. Greens and blues are less arousing and are overall more pleasant than yellows and yellow-greens. Warm colors (reds and yellows) advance while cooler colors (blues and greens) retreat. These, like textures, can be intentionally used to increase or decrease the perception of depth. If warmer colors are placed close and cooler colors used farther away, depth is deceptively extended. Color can also have effects on feelings
of comfort, health, and "coziness." Gheorghita identifies this “magic” color as warm white, exhibiting all these characteristics (Gheorghita, Grigorvischi & Ciolacu-Miron 2014).

Brilliance of Color: The brilliance of colors refers to its brightness and vividness and can be attributed to perceptions of size. Darker, less brilliant colors make spaces seemingly smaller while brighter, lighter colors increase a space's perceptual size.

Proximity: Can this material be touched, smelled, and heard as well as seen? Incorporating these materials at the human level can create a different affect than if it is unreachable by visitors.

8. Physical Amenities

Physical amenities include items in the landscape that cater to human needs such as seating, tables, restrooms, places to eat, play materials, elements that provide for the specific program of that space, etc.

These amenities can make a space more inviting as they show that a place is providing for people's basic needs as well as their higher needs. The presence of seating in a public space allows and encourages interaction between people. People particularly like movable seating because they are able to control it and use it in whatever way they choose. Informal seating can also be considered in this category: steps, planter edges, tops of walls and half-walls, etc. Restrooms, though not mandatory in public parks, allow people to stay for longer which increases familiarity and appreciation, even on a very basic level. People will choose to spend time in and come back to public places that meet all of their basic needs. Eateries/restaurants/food stands can add another layer of program to a park. They can act the
attraction that brings people to the site, while other elements can encourage them to explore more of the park and stay longer. Most other physical amenities deal with various programs a space may have.

Figure 2.3.2.3 – 2.3.2.6: Examples of various seating types

Figure 2.3.2.7 – 2.3.2.9: Examples of types of play equipment
Figure 2.3.2.10 and Figure 2.3.2.11: Examples of eateries

Figure 2.3.2.12 – 2.3.2.14: Examples of programmed areas

Figure 2.3.2.15: Example of restroom facility
2.3.3 Social Qualities

Social Qualities are possibly the most important factors when analyzing good public places. William Whyte documented many human behaviors within public places that dealt with the sociability of the places. From Whyte's research and research of their own, the Project for Public Spaces created four categories signifying good public places: sociability, uses & activities, access & linkages, and comfort & image. This can also be tied to Maslow's lower-tier need of love and belongingness which includes the need for friendship, intimacy, affection and love from family, friends, work groups, and romantic relationships. The need for human relationships and human interaction remains a significant human need. This contributes to the reason why people enjoy occupying public spaces: as William Whyte found out, people like to be where other people are (Whyte 1988).

9. Current Function

What is the space used for? Is there a set or understood program? Does the use change throughout the day/does the function change from day to night?

The function or program of a space is important when evaluating how it is performing as a public place. Is this space for eating and socializing, or is it a quiet, contemplative place? It is also influential when looking at the park as a whole as successful parks provide a variety of spaces, both active and quiet, programmed and un-programmed. Secondary uses should be considered equally with primary uses. As Whyte reports, people looking over, noticing, and smiling at a place is just as important as people using it (Whyte 1988). This concept ties in with the idea of overall appreciation.
10. Sociability of the Space

Is this a place for socializing? Do the groups socializing seem to have come to the park together, did they meet each other there, or are they interacting with strangers? Are the physical elements in the space conducive for socializing, or are people having to become creative with how and where to interact? Are there natural places to gather, talk, and interact?

The strength of the sociability of a space is associated with the relation of elements in the landscape, though the preference of these relationships is often an unconscious inclination. We prefer places in which gathering is easy, convenient, and in a place where people-watching is possible. We are also more comfortable when a place encourages strangers to talk amongst themselves (Whyte). This category, like the last, is tied with appreciation and acceptance of a place, and the innate need for human interaction.

11. Movement through the Space

Is this space for walking through, lingering, gathering, spectating/people watching, funneling, changing direction, etc.?

Looking at the movement within a space and the times in which this movement occurs can give insight into what activities are most popular and if those activities are based on the work day schedule, how people use the space, who uses the space, and if it is an important connecting link between areas of the city (Whyte 1988). Public spaces are generally more successful if there are more people staying in the space than there are people moving through or around the space.
2.3.4 Symbolic Qualities

Symbolic qualities have a unique place in the evaluation of public places as they are not physical objects in the landscape; they must be derived either from the past or through consideration of the interaction between the elements forming a comprehensive picture of the space as a whole.

12. Historic Use

As the name suggests, this category looks at this particular space's original function. From this information, are there any elements that remained through the design transformation? Did the design use or abstract any of the historical elements, spatial qualities, or uses?

Considering the historic use is a meaningful factor in these types of public parks because their past is an important part of how they were shaped as a park. If the past of these sites did
not matter, designers could just clear the whole site to create a park with fewer design limitations; however the historical elements of post-industrial sites are the foundation of these dynamic parks.

Figure 2.3.4.1 and Figure 2.3.4.2: Example of historical uses that influenced design transformation
Figure 2.3.4.1: (Natur-Park Schöneberger Südgelände, 2015).

13. Order

Order contains two parts: unity and clarity. Unity refers to the unified theme among individual parts of the space. Is there a unified theme between some or all elements? Do individual elements seem to fit together? Clarity refers to the purpose or function of a space. Is the purpose or function obvious? (Kopec 2006).

Though unity and clarity tend to make a space easier to understand, the absence of one or the other does not mean the space is a “poor” space. A space may have a collection of parts that do not have clear unity, but if their proximity creates a unique character that is particularly enjoyable and/or comfortable, then the space can be a success. Order should be considered when evaluating legibility in the landscape.
Figure 2.3.4.3 – 2.3.4.5: Example of site with clear unity through the linearity of elements, relation to historic railways, repetitive character, and level of mystery along the path.

Figure 2.3.4.6 and Figure 2.3.4.7: Example of site with high clarity (left) and one with low clarity (right). In figure 1.1, multiple climbing walls define program, movable stools allow for gathering and taking a break, space is well defined by walls and materiality, and the elevated walkway allows for different viewpoints of the space. Figure 2.3.4.7 lacks clarity because there is no clear delineation of space, no apparent program, no seating, no through pathways, and no specific relationship to the adjacent building.

14. Comfort & Image

This category pertains to beauty, attractiveness, visual richness, safety, and cleanliness. Is the area comfortable to be in? Is it clean? Does it feel safe? Is it "beautiful?" Comfort and Image can be a collection of many variables and is arguably the most subjective category in this survey due to people's different perceptions of comfort and beauty.
The importance of the comfort and beauty of a place relates to Maslow’s hierarchy of aesthetic needs and the characteristics of good public spaces. Kopec explains that some characteristics of beauty are not completely subjective. “. . .Two aspects of beauty seem to transcend time and culture: that of visual penetration. . .and the amount of visual depth” (Kopec 2006), and the ability for people to see far distances and to understand the "three-dimensional spatial relationship between objects in the environment," are common themes in perceiving comfort and beauty.

2.4 Correlations between Case Studies

Once each case study has been evaluated according to the criteria, comparisons and correlations can begin to be drawn between the different spaces to fully understand how they perform. This can also bring valuable insight as to why or what characteristics may be causing a “good” space or a “poor” space.

For these case studies, a diagram was made to associate what spaces in each park had similar characteristics according to each quality type. By analyzing what was similar in each park, inferences could be made about what characteristics contributed to the space being either successful or unsuccessful overall.
Table 2.4.1: Diagram showing the correlation of each case study’s spaces’ characteristics with regard to each overall evaluation category.
3.1 Introduction to Case Studies

Figure 3.0.1: Map of case study park locations.
Landschaftspark Duisburg-Nord

- Location: Duisburg, Germany (population 486,816)
- Distance from City Center: ~6.2 miles
- Size: 568 Acres (85 Acres in evaluation boundary)
- Designer: Latz + Partner Landscape Architecture
- Former Use: Duisburg Meiderich Ironworks

This industrial site, part of the Ruhr District, was an ironworks company owned by August Thyssen. Its location next to the coal fields was a strategic move by Thyssen to create the necessary link between coal and iron. The plant produced pig iron “as a rule as a primary product for further processing in Thyssen’s steel works” (Landschaftspark n.d.). In 1985, the
company closed down the Ironworks plant due to “international changes in steel manufacturing and globalization of the steel market” (Nickerson n.d.). The International Building Exhibition (IBA), created by the German government in the late 1980s, was an organization that strove to rehabilitate and restore these types of sites that filled the Ruhr districts and, on a larger scale, the Emscher Region.

Within the Emscher Region are the districts of Meiderich and Hamborn, in which Landschaftspark begins to connect.
- **Location:** Berlin, Germany (population: 3.5 million)
- **Distance from City Center:** ~2.8 miles
- **Size:** 99 Acres
- **Designer:** Atelier LOIDL
- **Date Built:** 2011
- **Former Use:** Triangular junction of Anhalter and Potsdamer railway yards

Gleisdreieck, meaning “triangle of rails” is the former home of three different railway stations, all located in close proximity to each other: the “Dresdner Bahnhof (1875-1882),
Potsdamer Bahnhof (1838-1944) and Anhalter Bahnhof (1839-1952), [resided] on a raised platform of some twenty hectares at a height of four metres above the city level” (Bordas n.d.). By 1945, the whole site had been completely neglected and was separating the neighborhoods of Kreuzberg and Schöneberg through a large mass of overgrown vegetation. The construction and popularity of the German Museum of Technology brought attention and interest to this site, resulting in the State of Berlin proposing an urban park in the area in the early 2000s. The main goal of the park was to connect the areas of Potsdamer Platz, located to the north, Kreuzberg to the east, and Schöneberg to the west (Bordas n.d.).
Parco Dora

Figure 3.1.4: Aerial view of Parco Dora with park boundary.

- Location: Torino, Italy (population: 870,702)
- Distance from City Center: ~2.3 miles
- Size: 91 Acres
- Designer: Latz + Partner Landscape Architecture
- Date Built: 2004-20012
- Former Use: Ingest Laminating Works (northwest), Vitali Steel Mill (northeast), Michelin plant (southwest), and Fiat Steel Works in Valdocco (southeast).

This site has a rich history of multiple manufacturing industries. It is divided into four sections by the Dora Riparia (River) and major roads Via Orviety and Via Borgaro/Corso Umbria, each section belonging to a different former company (Enhuber 2011) & (Architonic n.d.).
3.2 Spatial Qualities

3.2.1 Landschaftspark Duisburg-Nord

Landschaftspark has unique spatial qualities provided by both the former industrial structures as well as the new design implementations. From the low-canopied, horizontally-extensive “Main Plaza,” to the open-topped, yet highly enclosed “Network of Rooms,” the park provides each visitor with a dynamic experience while moving from space to space. The park attracts and accommodates many types of people; some spaces, such as the “Northwestern Rooms,” are designed for a serene and sensorial experience, while others, such as the “Climbing Walls,” are geared toward a high activity adventure.

The park contains main gathering areas (“Main Plaza” and “Northern Plaza”), smaller sub-spaces (“Network of Rooms” and “Northwestern Rooms,” among many others), transition/movement spaces (“The Tunnel,” “Network of Rooms,” and various other pathways), spaces for pure activity (“Climbing Walls”), open event spaces (“Northern Plaza” and multiple grass lawns across the park), and places of prospect (large industrial towers and elevated walkways) and refuge (“Northwestern Rooms” and “Main Plaza”). Though there are many other types of spaces within Landschaftspark, these are the main categories that seem to be consistent in all the case studies evaluated in this study, and are important to providing variety in any public space.

The main gathering areas of Landschaftspark, the “Main Plaza” and the “Northern Plaza,” are quite different in character and spatial characteristics. The “Main Plaza” is horizontally wide, though the canopy of the trees keep the space vertically low, relating to the scale of the human body. The trees act as the intermediary between people and the massive structures
that dominate this site. The trees also provide the necessary softness and shade to the otherwise open and hardscaped area. The “Northern Plaza” provides the opposite effect.

There is no vegetation in this space, no mediator between human and domineering structures, and it is horizontally defined but vertically infinite; nearly the opposite of characteristics from the “Main Plaza,” yet the individual elements and proportions of the space intrigue people.

Figure 3.2.1.1 and Figure 3.2.1.2: “Main Open Space” (left) and “Northern Plaza” (right) displaying different plaza characteristics.

The sub-spaces are important in every public space because the proportions, scale, and enclosure generally make the space more intimate. They also provide different programmatic qualities. The sub-spaces defined in this evaluation, the “Network of Rooms” and the “Northwestern Rooms,” are two areas that, spatially, are very similar, but contrast in the feeling of enclosure and overall cognitive impression. A single room in the “Network of Rooms” can feel extremely enclosed due to its 5:1.2:1 (LxWxH) proportions. These are extremely beautiful rooms, however they do not invite people to stay for long. A room in the “Northwestern Rooms,” displays the same length-to-width ratio as the other rooms, but the height of the wall is nearly half, allowing more light to enter and reducing the feeling of enclosure. These spatial differences, along with the addition of more soft materials and
physical amenities, make these rooms more comfortable and more desirable to spent longer periods of time.

![Image: Network of Rooms](image1.png) ![Image: Northwestern Rooms](image2.png)

*Figure 3.2.1.3 and Figure 3.2.1.4: “Network of Rooms” (left) and “Northwestern Rooms” (right) displaying variance of enclosure and other spatial characteristics, creating a distinction between levels of comfort.*

The transition spaces are those that promote movement through or provide a gentle change between vastly different spaces. “The Tunnel” is a movement-based space that brings people underneath the former ore bunkers to see the inner structural elements of the bunkers, transporting them from one side to the other. Its linear and enclosed character magnifies the vast and open quality of the two end spaces. The “Network of Rooms” is a different type of transition space; instead of being a straight path from one space to another, these rooms take people on a journey through the designed ore bunker rooms to the other side. These spaces focus on the journey, not the destination. Both of these connections are very different, spatially, than the spaces they connect.
The “Climbing Walls” have unique spatial qualities that, though largely determined by the pre-existing structures, are program- and activity-focused. The various sized spaces accommodate different group sizes and different age groups. The more daring, tall, enclosed spaces are programmed for older users, while the shorter, more open spaces are geared toward younger users. The spatial qualities help define the user groups that use the space.

Figure 3.2.1.5 and Figure 3.2.1.6: “Climbing Walls” showing the children’s climbing walls among the more open, less enclosed space (left) and the adult climbing walls in a more enclosed, precarious space (right).

Landschaftspark contains a network of spaces that are highly contrasting in spatial organization and structure. The spatial characteristics of each space aid in creating an entire network of spaces that both compliment and contrast each other. The mix of large and small spaces, enclosed and open, hardscaped and highly vegetated, creates multiple places of interest that satisfy many types of visitors’ desires.
3.2.2 Park am Gleisdreieck

Park am Gleisdreieck provides a much different spatial experience than Landschaftspark. The historic components are limited to railroad tracks, bridges, and a few former maintenance buildings because not many structures were left on the site when it was abandoned in the early 1900s. Since there are not many historic remnants present on site, this park took a softer, more typical “park-like” form during design. The overall shape of the park naturally divides some of the spaces while thick vegetation, program type, major pathways, and perimeter roads and buildings further define the spaces.

Park am Gleisdreieck, like Landschaftspark, is composed of main gathering areas (“Main Open Space” and “Western Open Space”), smaller sub-spaces (“Southern Wedge” and “Eastern Edge”), transition/movement spaces (“Southern Wedge” and “Western Open Space”), and spaces for activity (“Eastern Edge”).

The main gathering spaces of this park are highly open and expansive. The “Main Open Space” is generally very open, but it also provides a gentle sense of enclosure along its perimeter of thick vegetation. This enclosure provides the necessary bit of protection the people prefer when choosing a place to spend time. The spatial qualities (both expansiveness of the field and more enclosed tree-lined perimeter) make this a perfect place for gathering, relaxing, picnicking, sunbathing, playing sports, etc.; it is an extremely versatile space that attracts many people, both day and night. During the day, the great amount of sunlight and ambient natural light attracts all people looking to soak up the sun; and at night, this place, though very dark overall, attracts many groups of people who come to socialize. The “Western Open Space” has a few variances to the characteristics of the “Main Open Space” but is similar
with regard to the amount of enclosure, size, and use of space. The program and circulation patterns are slightly different and therefore create a distinctive character. Instead of the perimeter being a popular place of respite, the inner lawn is the popular place to gather as most of the heavy circulation happens on the outer edges. The proportions of this space compared to the “Main Open Space” are narrower, more subdivided, and more clearly defined by taller elements (residential buildings and overhead railways), yet it feels just as open as that space.

Figure 3.2.2.1 and Figure 3.2.2.2: “Main Open Space” (left) and “Western Open Space” (right) displaying similarities in amount of enclosure, size, and use; and slight differences in dedication of space for movement and organized activities. Figure 3.2.2.1 (Bordas 2011).

Connecting these gathering space to the neighborhoods surrounding them are the transition and movement spaces. There are numerous entries into the park, but the most travelled path is the north-south trail that leads from the southern neighborhood of Schöneberg to the northern road Schöneberger Ufer that leads up to Potsdamer Platz, a major business district. This trail directly connects the “Southern Wedge” to the “Main Open Space,” and up through the “Western Open Space.” This path, over a mile in length, is highly trafficked in the morning and evening by people traveling to and from work as it is a relatively direct and
highly scenic route from the south part of Berlin to the main part of the city. The southern portion of the park is dedicated almost entirely to linear movement while the “Western Open Space” integrates this movement with popular gathering spaces and high activity spaces, making it more engaging and appealing to an everyday user.

Sub-spaces can be defined as spaces that attract smaller groups of people, have a more intimate spatial character, and have a scale that closer relate to the human body. Though the “Southern Wedge” has been identified as a space with high traffic along one of its trails, there are other portions of this space that feel more personal and secret. There are two additional trails with tighter proportions that wind their way through railroad tracks and dense vegetation to lead people to the northern edge. Small places of rest allow individuals and small groups to briefly gather and relax. The woodchip path of this area can be compared to “The Tunnel” at Landschaftspark due to its proportions, but the materiality makes it considerably more inviting. The “Eastern Edge” provides multiple sub-spaces within its boundaries. This space is divided into sections by age-specific program; there are multiple play spaces for various age groups of children, subdivided lawn areas, and multiple pathways for movement between spaces. Though multiple playgrounds may make it seem less intimate, the size and target user group of each play space naturally limits the number of people who use it, creating a friendly environment for children and their parents/guardians. The smaller lawn areas tend to invite smaller groups who desire more privacy than the large lawns do.
As described above, the main area for programmed activity is the “Eastern Edge,” however the “Western Open Space” also provides an area of programmed play for teen/adult user groups. Spatially, the playgrounds in the “Eastern Edge” are clearly delineated and defined by boundaries whereas the play area in the “Western Open Space” is centralized and more integrated with the areas of gathering and movement. These areas of play and high activity are very different from each other, and very different from the play spaces defined in Landschaftspark, but all are successful. Landschaftspark has more enclosed, clearly delineated spaces that form a row of rooms, the “Eastern Edge” play spaces are clearly delineated but not particularly enclosed, and the “Western Open Space” play area is a hub in the center of an otherwise open gathering space. It becomes clear that the spatial qualities of play/activity
areas can vary greatly depending on the context and target user groups. Aesthetically, they may vary greatly, though the implementation of specific play equipment may lower the aesthetic ideal of a park slightly.

![Figure 3.2.2.5: Park am Gleisdreieck’s play/activity areas: “Eastern Edge” providing subdivided play spaces for younger children, and the “Western Open Space” providing a consolidated play/activity area for a variety of ages.](image)

Regarding spatial qualities and character, Park am Gleisdreieck is a successful and aesthetically pleasing park due to the various sizes and scales of gathering spaces, play spaces, and sub-spaces; the mix of open and semi-enclosed spaces within the same general area; and the variance of light and shade within the same area. This park gives people options of spatial character within the same spaces so that one space can serve a variety of needs and satisfy many people’s preferences.
3.2.3 Parco Dora

Parco Dora acts as the middle ground, spatially, between Landschaftspark and Park am Gleisdreieck. The park is composed of spaces of semi-enclosure due to historic elements as well as open naturalistic “park-like” areas. Much like the previous two parks, the areas can be categorized as main gathering areas, smaller sub-spaces, transition/movement spaces, and spaces for activity.

The main gathering space in this park also functions and the main space for play and activity. The “Covered Pavilion” acts as the anchor for the rest of the park as it accommodates the most programmed activities, it can host large events, it is aesthetically captivating, and is the central connection point of all the other areas of the park. Spatially, this space is one large, open room, which varies greatly from both Landschaftspark’s and Gleisdreieck Park’s main gathering spaces. The other parks’ gathering areas provide a variety of characteristics, light and shade, varied seating opportunities, various types of program, and sections of partially-enclosed spaces to accommodate people’s innate need for protection. This space, however, functions much differently. Its vastly open (yet covered) character lures people into the space. All of its spatial qualities are established by hard materials which bring a distinctive character to the space, juxtaposing the surrounding spaces. The sequence of steel columns, however, brings a similar rhythm as the “Northern Area” and creates a common language between the two spaces.
The smaller sub-spaces lie within the “Western Area,” “Northern Area,” and “Southern Area.” These spaces are more subdivided which creates pockets that relate to human scale and provide more intimate experiences. These particular sub spaces use the historic elements to help divide and define the space while providing elements of interest. The “Northern Area” consists of the network of paths and vegetated beds intermixed with rows of large, historic steel columns. When viewed from the east or west, the rhythm of columns creates subtle
delineations of space and virtual walls, however when viewing the space from the north or south, it is completely open to the covered pavilion, creating an integration with its program and spatial characteristics. The variety of scales in this space relates the visitor to the historic elements. The steel columns tower over the space, but since they act as focal points and create the essence of the place, their large scale is appropriate. The elevated walkways, lower walkways, and vegetation beds add the human scale that is necessary for creating comfortable spaces. The “Western Area” is a relatively open area, however it feels contained due to the commanding buildings that surround it. The “Southern Area” is the most subdivided of all the sub-areas, yet it is the least utilized space of the whole park. There are many human-scaled, spatially comfortable spaces within the southern portion that should, in theory, attract and support small groups of people to gather, however, the use is extremely low.

The transition/movement spaces are generally located within the larger areas. The southern part of the park connects the south neighborhood (toward Torino’s city center) to the “Covered Pavilion” section of the park. The main movement area is the elevated walkway that runs between the “Northern Area” and “Covered Pavilion” to connect to the “Western Area” over Via Borgaro, a large vehicular thoroughfare.

Figure 3.2.3.4 and Figure 3.2.3.5: The elevated walkway located in the “Northern Area” (left) and the southbound connecting path in the “Southern Park” (right).
The play/activity areas are spread throughout the park. Every section of the park includes a play area that provides either play equipment or organized sports courts. The “Covered Pavilion” is the only space that is devoted fully to sports and activity, however its adjacency to more restful and contemplative spaces gives it the variety it needs. The other three spaces include small play spaces that are simply a component of the space, not the main attraction.

The “Covered Pavilion” can be compared to Park am Gleisdreieck’s “Western Open Space” as it is a sports and activity area acting as a central hub for the surrounding area. Both spaces open up to other gathering areas and are integrated into the larger context instead of acting as a separate entity.

*Figure 3.2.3.6: The “Covered Pavilion” and “Northern Area’s” adjacency and connections with regard to the play/activity spaces provided.*
Figure 3.2.3.7 and Figure 3.2.3.8: The “Western Area” (left) and “Southern Park” (right) display small play areas that are a component of the larger area.

Though there seems to be plenty of sub-spaces and natural gathering areas within the park, the lack of people in Parco Dora raises a few questions: Why are there so few people in this park? Do the spatial, physical, social, or symbolic characteristics dissuade use of the spaces, or is there an unrelated factor that is responsible for the lack of use in most of the spaces?

3.3 Physical Qualities

3.3.1 Landschaftspark Duisburg-Nord

The physical amenities in Landschaftspark are generally centralized in a few areas that serve the rest of the park. The “Main Plaza,” contains the highest number and highest variety of amenities while the “Climbing Walls” and “Northwestern Rooms” provide more programmatic amenities for play and rest.

The amenities generally reinforce the social needs of visitors while the other physical qualities can influence their perceptions of the space. In the context of Landschaftspark, the physical quality and condition of the historic structures and materials have an extremely important role in how each space is perceived. The condition of a material may be “poor” in the context of a new urban park, however the rust and weathered quality of a steel I-beam
allows the visitor to appreciate the history of the structure as well as its new-found function in the park. Historic weathering should not be confused with poor maintenance, however. Landschaftspark is very well maintained, so the weathered condition of many of the materials is a welcome sight. Parco Dora (as explained in section 3.3.3 below) is an example of a more inadequately maintained park that displays elements that are in poor condition due to a lack of care, leaving an abandoned and slightly uncomfortable feeling to the park.

![Image of Parco Dora's Southern Park](image1) ![Image of Landschaftspark's Northwestern Rooms](image2)

*Figure 3.3.1.1 and Figure 3.3.1.2: Parco Dora’s “Southern Park” (left) shows a lack of overall maintenance as trash and weeds litter the walkways and weeds are overtaking planting beds. Landschaftspark’s “Northwestern Rooms” exhibit a highly maintained garden that still allows vegetation to naturally take over parts of the historic elements. The weathered look of the concrete walls and the abundant growth of vines add to the experience of this space.*

Spaces such as the “Network of Rooms,” “The Tunnel,” and “Northern Plaza” are areas of particular physical qualities that pertain directly to human perceptions rather than physical amenities that pertain accommodate basic human needs. The physical appearance of the “Network of Rooms” is simple and beautifully integrated with the industrial character and history of the space. The materiality begins to create a sense that nature is slowly encompassing this historic structure. The design, in a way, seems happenstance, yet the overwhelming beauty of these rooms combined with the scale and sense of enclosure can
evoke strong feelings toward the space. “The Tunnel” is set apart mainly due to its spatial characteristics, however its physical properties create a slightly uncomfortable, yet fascinating skeletal connection between two larger, more comfortable areas. The “Northern Plaza” is a space that is typically devoid of amenities, but is one of the most photographed parts of the park. The physical characteristics are unlike any other part of the park; the historical structures are meant to stand as points of interest on their own rather than being softened or accentuated with vegetation and extra design features.

The “Main Plaza” contains a diverse range of amenities: formal and informal food vendors, patio seating, individual benches, picnic tables, and public restrooms. The combination of amenities and the choice of materiality in this space are part of what make it so successful. The industrial structures punctuate the space and prove to be exponentially larger than human scale, yet the colorful vegetation relates to human scale and brings a softness to the space would otherwise be lacking. The simple palette of industrial structure, decomposed granite paving, and various types of trees creates a comfortable space that is easily legible and highly picturesque.
A different type of amenity, play equipment and infrastructure for high activity, can be found consolidated in the “Climbing Walls” area and spread throughout a few other spaces in the park. The “Climbing Walls” area consists of thirteen concrete walls equip with climbing essentials, ten concrete columns on which to climb, one large slide that is integrated with the walls, and multiple other play and seating elements. It is full of amenities, yet these amenities’ functions are associated with the sports/activities they support.

Between the “Main Plaza” and the “Climbing Walls,” these two spaces provide the greatest total number of amenities, however they function in different ways. The “Main Plaza,” due to the diverse nature of its amenities, attracts a greater variety of people and more people overall, whereas the “Climbing Walls,” while still attracting a great number of people, attracts those with the same goals/interests.
3.3.2 Park am Gleisdreieck

The fewer number of remaining historical structures and elements and overall design of the park make Park am Gleisdreieck slightly simpler with regard to its physical qualities. Its naturalistic “park-like” character is few in material elements and provides relatively few amenities, yet these amenities are multifunctional. Play and programmed physical elements are mainly contained in the “Eastern Edge” and the “Western Open Space,” while the more versatile and simple elements compose the “Main Open Space” and “Southern Wedge.”

The “Eastern Wedge” provides play equipment, restrooms, and seating, but this area, like the play areas in Landschaftspark, attracted a fairly narrow spectrum of people. The restrooms do, however, the greater park. The “Western Open Space,” since it is more integrated with larger gathering areas and a high-traffic path, receives a greater number of people with higher diversity with regard to age, activity type, and use of the space. The space provides basketball courts, skateboarding/bike ramps, mounds for play, specified children’s play area, and seating for the areas of high activity.

The “Main Open Space” and “Southern Wedge” are arguably the most “naturalistic” spaces of the park. The “Main Open Space” is a very large lawn area with a formerly-used railroad running down one side and masses of vegetation gently defining its edges. This space is the gathering space in the park with the highest overall use. Since there is no defined program, the physical elements support the multitude of activities that occur here. Benches allow people to sit and look out over the lawn, yet most people choose the grass to sit on/perform their chosen activity. “The Southern Wedge” is a very different kind of space that contains a simple and limited material/amenity palette. Since this space is mainly used for through movement, these
characteristics provide people with a pleasant alternative route from the vehicular streets; one that provides a more sensorial and carefree commute. In this case, the few benches provide the resting spots that are needed while still promoting a movement-based activity.

Figure 3.3.2.1 and Figure 3.3.2.2: The “Southern Wedge” providing a softer, more comfortable commute for those traveling by bike or foot.

3.3.3 Parco Dora

The physical qualities of Parco Dora are very compelling and visually appealing, but various elements of the park have fallen into disrepair, and therefore take away from the overall experience of the park.

The spaces of the most noticeable disrepair are the “Western Area” and “Southern Park” displaying dry planting beds full of weeds, overgrown lawn spaces, graffiti-covered walls and features, neglected water features, and littered walkways with weeds growing through the paving (See Figure 3.3.1.1). These spaces also received the fewest number of visitors throughout the evaluation days. The “Southern Park” contains a variety of amenities including
play equipment, a generous number of varied seating opportunities, and various sizes of gathering areas, however they amenities are rarely used. Both the “Southern Park” and the “Western Area” of Parco Dora, program- and amenity-wise, are similar to the “Eastern Edge” of Park am Gleisdreieck displaying designated play areas, simple seating, a mix of sunny and shaded areas, and medium-sized gathering spaces, yet the functionality and overall use of these spaces varies greatly. The “Western Area” is used mainly by people walking their dogs, running along the perimeter path or through the space, and small groups of teens spending a few minutes before moving on to the next space. People do not tend to spend time in this space which is the adverse of what happens in Park am Gleisdreieck’s “Eastern Edge.”

Figure 3.3.3.1 and Figure 3.3.3.2: Parco Dora’s “Western Space” (left) and “Southern Park” (right) showing similar physical amenities and overall qualities.

Figure 3.3.3.3: Park am Gleisdreieck’s “Eastern Edge” displaying similar physical characteristics, a few more amenities, and greater public use overall than images above. (Kurz n.d.).
Though compared to the other two case studies the overall number of people in Parco Dora is significantly fewer, the most populated parts of Parco Dora are the “Northern Area” and the “Covered Pavilion.” The number and variety of amenities in these two spaces are fewer than the previous two spaces (“Western Area and “Southern Park”), however the foot and bike traffic is higher, people stay longer, and the overall atmosphere is more comfortable. Both of these spaces share the same defining elements, the large orange steel columns of the former Vitali Steel Mill. These physical structures give the two adjacent spaces a historically significant identity and are important to the spatial and physical character of the area as well as the whole park. The “Covered Pavilion” attracts people who wish to take part in its programmed activities while the “Northern Area” lures people in through the continuation of columns in their consistent rhythm, the moments of hide and reveal, the panoramic view from the elevated walkway, and the slight softness brought about by the vegetation.

Figure 3.3.4 and Figure 3.3.5: Parco Dora’s “Covered Pavilion” (left) and “Northern Area” (right). The line of columns that divides these two spaces is also what connects them, as the whole line is open.

The physical amenities and characteristics of Parco Dora are comparable to those in the two other case study sites, however the use of this park is significantly less, suggesting that the
number and variety of physical elements within a park does not necessarily contribute to the success or used of the park or sub-space within the park.

3.4 Social Qualities

3.4.1 Landschaftspark Duisburg-Nord

The social qualities of Landschaftspark vary by space from semi-private and secluded to highly social and interactive spaces. The main gathering spaces are, in general the more social spaces of the park.

Social qualities look at the correlation between all the other qualities and how they affect the way in which people interact in a space. These qualities have a strong correlation to the program and physical amenities present in the space, location of the park, spatial qualities, and presence of other people. When applying this analysis to Landschaftspark, the hierarchy of social spaces becomes apparent.

The “Main Plaza” and “Climbing Walls” attract the most people and support a highly interactive atmosphere due to a few factors. The “Main Plaza” is one of the main entrances into the park and contains the highest number and the most varied amenities which equates to an attraction of a wide range of people. The eateries, in particular, attract a great number of people; this concentration of people invites new interactions to happen between visitors. The space itself is also very conducive to socializing as there is a great deal of space in which groups of all sizes may find a place to meet. This space also makes individuals feel comfortable through the placement of small benches off the main through-way, the informal eating area seating, people-watching opportunities, and the invitation to explore. The “Climbing Walls”
presents a different type of social space. This series of spaces is highly programmed and engages a specific audience, however there are many people who take part in these activities and making the space an important social area.

![Figure 3.4.1.1: One of the play spaces of the “Climbing Walls” area showing the various uses and popularity.](image)

The “Northwestern Rooms,” in contrast with the previous two spaces, stay relatively quiet, even during large events; this does not, however, discount their contribution to the park. Smaller, more intimate spaces are always important to public spaces because people often need a place of respite from the active parts. Their location, materiality, enclosure, and ambience have made these rooms a place for one-on-one conversations, personal reflection, and escape from the outside world.

“The Tunnel” and the “Network of Rooms,” as spaces of linear movement, promote a less social environment. People are not necessarily encouraged to stop to talk in these spaces, however the spaces are enticing and thought-provoking, sparking some interaction between familiar people as they move through the spaces.
The variance of social spaces supports a wide range of people and interaction types which, in turn, attracts more people to the park overall. There is a place for everyone, whether they seek a quiet refuge or a public, community-engaged place.

3.4.2 Park am Gleisdreieck

Park am Gleisdreieck is the most highly sociable park of the three case study sites based on sheer number of people, use of space, and interaction between different sizes of groups within the spaces. The “Main Open Space,” “Eastern Edge,” and “Western Open Space” are all sociable spaces that attract slightly different crowds.

The “Main Open Space” is popular at all times of day, evening, and night on all days of the week. Large groups, small groups, and individuals alike enjoy spending time in the large open lawn as it accommodates many needs and creates an atmosphere in which everyone feels welcome and engaged. The high number of people attracts even more people because its
popularity suggests a sense of safety and comfort. Though some of the other spaces may provide more amenities and attractions, the “Main Open Space” attracts the most people overall.

The “Eastern Edge’s” sociability is mainly due to the number of children and parents who enter the space. Because it attracts a certain audience, its sociability is limited to similar people; it generally does not promote interactions between strangers of different ages, lifestyles, or stages of life. The play areas and spaces with ample seating provide places to gather and socialize, making the area’s physical and spatial characteristics conducive to a strong social environment.

The “Western Open Space” incorporates the characteristics of the previous two spaces into one active, very communal space. It takes the versatility of a large open lawn area and supplements this with programmed play spaces for multiple ages which, together, attract a highly diverse group of people that may use and interact in the same space.

The “Southern Wedge” represents the least social space of Park am Gleisdreieck, though it does support interactions between people who are travelling through the space. Since it does not provide many places to gather or rest, people do not tend to settle in this area for long. This space does, however, support a substantial number of people moving through the space; just because this space is not particularly “social” does not make it less important or inferior to the other parts of the park. It serves the purpose of movement and connectivity which is what it is designed for.

Park am Gleisdreieck offers a variety of spaces and atmospheres. While most of the spaces in this park are highly active, one can still easily find a place of refuge along some of the less-
travelled paths and near the edges of thick vegetation, attracting and providing for various types of people.

3.4.3 Parco Dora

Compared to Landschaftspark and Park am Gleisdreieck, Parco Dora seems somewhat detached from the social realm. There are spaces that are noticeably more visited and more interactive than others within the park, but overall, the number of people who come to the park is significantly lower than the other two parks.

The “Covered Pavilion” and adjacent “Northern Area” attracted a decent number of people throughout the day while the “Western Area” and “Southern Park” attracted close to none. The program of the “Covered Pavilion” seemed to have a slight influence on the number of people who came; of those who came through this space, a majority participated in some activity that was provided for by the programmed elements within the space. This program encourages more active interaction rather than passive interaction. The physical and spatial characteristics of the “Covered Pavilion” and “Northern Area” tend to elicit conversation and interaction between those moving through the spaces.

The social qualities of both the “Western Area” and “Southern Park” are extremely low. These spaces attract a small number of individuals and an even smaller number of groups, resulting in almost no social interaction between visitors.
3.5 Symbolic Qualities

3.5.1 Landschaftspark Duisburg-Nord

The symbolic qualities of all post-industrial parks are very valuable to the overall experience of the place; this is especially true for Landschaftspark as there is an abundance of historic remnants that give the park its unique character. The symbolic qualities not only associate with the historic use of each space, but with its comprehensive image and impression. Every space evaluated at Landschaftspark includes historic elements, making the symbolic qualities strong and an essential factor in the success of that space.

The “Main Plaza” has a close association with the historic structures as they punctuate the space in various ways as well as frame certain parts of the space. The history of the space defines it through the remnants of railroad tracks running through the central opening; pipes running overhead; and former administrative buildings, factory structures, and the water tower enclosing the perimeter. This was the central loading space in the past, and it remains the main hub for the park today. The plaza contains clear unity and clarity as the spatial, physical, and social qualities all create a comfortable and cohesive space that is essential to the park. It is inviting, active, historic, integrated with the sense of place, and appeals to many of the senses.
The “Network of Rooms” and “Northwestern Rooms” both include the walls of the former ore bunker and sinter plant areas. The walls act as a focal element, an element of scale, and a spatial element that give each room its character. Through the design of each room, visitors’ are able to relate with the massive size of each storage space, allowing a deeper understanding of the sheer scale of these factories as a whole; these were simply the storage areas for the ore. They are highly photographed spaces that capture people’s attention through their simplicity in form, use, and materiality. The amount of comfort, however, varies greatly due to the amount of enclosure. The symbolic qualities of the “Network of Rooms” are arguably the most
important in each room; the lack of comfort and sociability in the room means there must be
another pulling force that brings people into the space and makes the space successful. The
symbolic characteristics and the beauty ("image") in the design articulation are these pulling
forces; they are what make these spaces unique, picturesque, and favorable.

Where the "Network of Rooms" brought people closer to the monolithic structures through
simple designs, the "Northern Plaza" allows people to step back and view the structures from a
distance. Industrial buildings and structures completely surround this space and give visual
richness in every direction. This space’s focus is on celebrating the form of the existing
structures and allowing people to view their complexity and beauty. Even though the elements
are varied in shape, scale, type, and location, their distance from the central stones are equal,
and they all fit together seamlessly, bringing a strong sense of order within the space.

Figure 3.5.1.4: "Northern Plaza" displaying the complexity and beauty in the industrial structures.

“The Tunnel” and the “Climbing Walls” are integrated smoothly in with the historic
elements of the factory. Though it is not known whether “The Tunnel” existed during the
height of the factory’s manufacturing, the space brings together many elements that represent the factory’s former character; the repetitive sequence, darkness, man-made elements, linearity, and roughness, among other characteristics. It is easy to understand and slightly uncomfortable to be in, giving its unique quality and contribution to the park. The “Climbing Walls” occupy the northern-most third of the ore bunker rooms. The walls provide the perfect setting and amenity for the space’s program. They are both interactive, as they open up to the path along the northern edge, and exclusive, as they are designated as specific climbing areas. The symbolic qualities are what distinguish this climbing area from all other man-made climbing walls. It is a unique experience to be able to climb a former bunker wall, and this is one of the main reasons people choose this park over others to visit and climb. The simplicity of these spaces give the overall space a strong sense of order, and the “comfort and image” of the space is high due to its unique wall configurations, sociability, and use.

3.5.2 Park am Gleisdreieck

Park am Gleisdreieck has more subtle symbolic qualities than the other two parks. Because the site was a rail switchyard, the historic remnants are few in number and horizontally-organized, resulting in a park that’s history is not particularly obvious. The southern part of the park begins to incorporate more of the rail lines into its design with remnants in the vegetation, bridges across the road, and a small path within a track, however most of the park does not preserve a majority of the tracks that were once there. The character of the switchyard is still present in the currently active train lines running parallel to, directly through, and above multiple parts of the park. The park is still active with the sounds, movement, and sight of
trains. The historic patterns can be figuratively traced through the movement that now takes place through the park. Park am Gleisdreieck, particularly through the “Southern Wedge” and “Western Open Space,” is a major thoroughfare for bikers and walkers commuting to and from work each day. In this way, it is paralleling its former use, but supporting different modes of transportation.

This character pertaining to the history and current proximity to train lines, along with the materiality and spatial characteristics, contributes to the unity and clarity throughout the site. The park as a whole is coherent, there is both delineation and integration of functions within various spaces, and all the elements correlate to help unify the park. This park is also particularly clean and feels very comfortable and safe, creating a high degree of “comfort and image.”

3.5.3 Parco Dora

The symbolic qualities of Parco Dora are more significant in some areas of the park and less significant in others. All the sections of the park have historic elements, however, their emphasis and contribution to each space varies. The “Covered Pavilion” and “Northern Area” provide the largest, most recognizable, most visually impactful remnants of all the spaces. The large orange steel columns have a powerful presence and provide the essence of the space that help define the character. The former warehouses can be imagined from the layout and shape of the columns. The “Western Area” and “Southern Park” have smaller historic elements that do not have strong presence and therefore do not particularly strengthen the character of the space.
The former use, sequence of manufacturing, and historic delineation of space is lost through the design of multiple spaces. Overall, the visual, physical, and experiential impact of the “Covered Pavilion”/“Northern Area” is what gives character and a one-of-a-kind quality to an otherwise mundane park. This combination of spaces, on its own, is incredibly impactful and beautiful; if there were a greater relation and stronger connection between this set of areas and the other sections of the park, the park as a whole may be more successful.
4.0 Chapter 4

Discussion & Conclusion

4.1 Introduction

Through the case study evaluations of spatial, physical, social, and symbolic qualities, overall patterns start to emerge. By using multiple theories of environmental psychology along with research from public/urban life researchers, this study was able to evaluate post-industrial parks from the perspective of aesthetic qualities, human-environment interactions, and sociability in the public landscape.

4.2 Evaluation Conclusions

Comfort vs Aesthetic Quality

Through observation of the most utilized and popular spaces, it becomes apparent that the following must be true of any successful space: A space must have either an immense sense of comfort or a high degree of aesthetic appeal/identity. There must be a reason for people to visit or spend time in the space. A sense of strong comfort can come from materiality, spatial characteristics, seating, sociability, or program. Visual stimulation and a powerful image can go a long way in attracting visitors to a site. Landschaftspark’s “Network of Rooms” and Park am Gleisdreieck’s “Main Open Space” are some of the best examples of these two concepts. The “Network of Rooms” displays powerful aesthetic quality and a relatively low sense of comfort.
while the “Main Open Space provides notable comfort and an ordinary sense of beauty; both spaces are very successful in their design intent.

A visually stimulating, picturesque, and beautiful space has an influence on whether or not a visitor comes to the space. This conclusion falls in line with Abraham Maslow’s theories, the Project for Public Space’s research, and Jan Gehl’s studies on what makes a successful place. Of the spaces in each park, Landschaftspark’s “Main Plaza,” Park am Gleisdreieck’s “Main Open Space,” and Parco Dora’s “Covered Pavilion” displayed the highest use in each park, respectively, and each space displayed a picturesque and/or visually stimulating quality which encouraged visitation.

Figure 4.2.1, Figure 4.2.2, and Figure 4.2.3: “Main Plaza” (left,) “Main Open Space” (center), and “Covered Pavilion” (right) visually rich characteristics.

Coherence and legibility

Addressed by all of the theorists considered in this research, these qualities are particularly applicable to post-industrial sites that are typically relatively complex in nature. These concepts acknowledge the composite relationship between all elements in a space, how they interact with one another, and how they read as a whole. It is essential that a site is coherent and
legible because our ability to appreciate the site is partially dependent on our ability to understand and make sense of it. Coherent and legible spaces are generally more aesthetically pleasing due to our inherent preferences and desire for balance in our surroundings.

Preservation and use of historic structures

The historic remnants that remain on these sites are what shape their aesthetic identity and are therefore a vital part of the symbolic, social, and often spatial and physical aspects of the park. The unique quality of these parks and their spaces created would not have the same impact if not for the history and significance behind the structures that have survived the test of time. In the three case studies, the spaces that were integrated with iconic historic structures had the most visually and emotionally striking impact.

Simplicity in design

In these spaces of inherent complexity, simple design creates the most influential and visually stimulating spaces. Landschaftspark’s “Network of Rooms” and Parco Dora’s “Northern Area” displayed simple designs that enhance the physical structures’ impact on visitors’ emotions. The scale, spatial organization, and physical presence of the structures were somewhat softened, yet celebrated by the use of other materials and design elements. Simplicity enhances the legibility of the landscape and allows the visitor to focus on the most important elements.

Variety

Variety covers many facets of these public parks. Variety and integration in spatial character, physical form, amount of versatility, use (singular or multifunctional),
accommodation of various group sizes, program type, number and diversity of amenities, light and shade, areas of prospect and refuge, and movement options within and between spaces create parks that accommodate the many needs of various types of people. Supporting a diverse range of people is important in expanding the sociability of public parks. Variety can be incorporated very simply, as demonstrated by the “Main Open Space in Park am Gleisdreieck. A deceivingly simple grass lawn, provides a popular gathering area that includes a range of seating options, occupiable space in light and shade, a range of spatial characteristics from semi-enclosed near the perimeter to wide and expansive near the center of the lawn, areas of prospect and refuge, and an extremely versatile presence.

Diversity and integration of program

Specifically programmed spaces can be successful in their own respect, however they tend to be more valuable and instrumental to the whole park when integrated with other types of program. Park am Gleisdreieck’s “Western Open Space” incorporates an open area of play that accommodates multiple ages, a main gathering lawn, and a highly trafficked connection corridor into one space. This results in a highly interactive space that encourages use throughout the day by a multitude of people, increasing the possibility of new interactions between unlike people. According to William Whyte in his study of public spaces, factors that encourage interaction between strangers contribute to a more comfortable place.

Provide for intended functions

A space’s ability to provide for its intended purpose appears to be more important than the number of different functions offered. A space that successfully accommodates its two
functions is more successful overall than one that provides a multitude of functions, but does so inadequately. The comparison of Park am Gleisdreieck’s “Southern Wedge” and Parco Dora’s “Southern Park” relates the two ends of the spectrum. The “Southern Wedge” is a space devoted solely to movement; it does so efficiently and thoughtfully by providing multiple paths that vary in size, material, and experience. The “Southern Park” is a space that spreads its focus between connection paths, water features, relationships to buildings, one historic structure, a delineated play area, and a linear row of empty lawn spaces. There is no hierarchy of space or program, and its overall function is discordant.

Maintenance

A seemingly simple and obvious quality that is evident in successful park spaces is appropriate maintenance. Landschaftspark and Park am Gleisdreieck display excellent upkeep on the parks while Parco Dora lacks adequate maintenance. Lack of use and the amount of disrepair in a park seem to be reciprocal characteristics. If the park is not cared for, people are discouraged from visiting, and if people do not visit, the concern and regard for the park by the entities that typically maintain it may decrease as well. As William Whyte points out, underuse is a greater problem than overuse. Historic and characteristic weathering should not be mistaken for a lack of maintenance. In the case study of Parco Dora, both historic weathering and a lack of maintenance have taken place; the maintenance issue takes away from the overall experience while the natural weathering amplifies the experience.
4.3 Successful Aspects of Each Park

*Landschaftspark Duisburg-Nord*

Landschaftspark is successful in all aspects of evaluation. It’s strong character, interesting network that entices exploration, variety in spatial characteristics and gathering spaces, integration and diversity of program, use and aggrandizing of remaining structures, opportunities for prospect and refuge, simple integration of materials to soften and relate to existing structures, and ability to accommodate very large events have created an extremely dynamic, experiential park. It caters to all the senses in ways that allow people to experience the site as a historic factory as well as a current public park. There is an exceptional balance between mystery and complexity, and legibility and coherence, resulting in a park that is visually stimulating and engaging as well as understandable.

*Park am Gleisdreiek’s*

Park am Gleisdreiek’s success comes from the high level of comfort that is palpable throughout each space, the variety in spaces to occupy, the energy radiating from the visitors, the location within the city of Berlin, the important connections it provides, and variety and integration of programmed and non-programmed space. The social qualities in this park are its greatest assets.

*Parco Dora*

Parco Dora contains a few qualities that are successful, however, the success of the site overall is relatively low due to the lack of coherence and legibility across the site, the degree of disrepair, low visual stimulation in multiple spaces, and . The integration of the “Covered
“Pavilion” and “Northern Area” is the most successful set of spaces in the entire site, particularly due to the spatial and symbolic qualities. The system of orange steel columns that tower over everything that surrounds the space is an impressive spectacle, creating a space with high visual and sensory impact which is a significant drawing factor for the park. The space’s historic character is retained, and varied spaces are created through the design. The social and physical qualities are less successful throughout the park.

4.4 Significance of Study

The creation of this set of evaluation criteria expands the field of environmental psychology and integrates its theories into the context of landscape architecture and urban design. The evaluations reveal how various qualities affect the overall success of the site, what physical or non-physical elements contribute to these qualities. The culmination of evaluation results also allude to more indirect insight about these sites: the importance of remaining structures, the various ways in which a site’s historical significance can be expressed through design or use, and the potential a designed post-industrial park has to enhance the social realm of the community and region.

This study can be used to promote the preservation and transformative use of post-industrial sites as they retain a rich history of the region, and often the entire nation. The findings of this study can be applied to future designs of various public spaces that strive to preserve historic character while providing for the functional and aesthetic needs of people.
4.5 Limitations and Recommendations for Further Study

Though quality, not quantity, of the case studies evaluated in this research was the goal, more case study examples would lead to a deeper understanding of the many qualities that lead to post-industrial public parks’ successes. The cultural differences, differences in the purpose of each park, and difference in amount of focus on historical elements of each site in these three case studies made for a good range of post-industrial parks for evaluation, however it lead to a profuse number of variables being considered.

Future studies could begin to compare post-industrial parks that share some of the same overall characteristics: compare particular types of factories (only iron-works factories or only railyards, etc.), those in the same country or region to avoid considerable cultural variables, or those that have a more similar overall use.

As these concepts can pertain to other types of public landscape architecture, this evaluation may act as a base for the creation of augmented evaluations that study the functionality and aesthetic qualities of additional post-industrial parks, general public parks, and other public spaces.

Due to time and approval constraints, this study was not able to perform surveys or interviews. These additions would be incredibly beneficial in future studies to understand exactly what elements and what qualities affected certain types of people and would begin to track trends of perceptions and preferences.
4.6 Conclusion

Though there are countless quantitative benefits of post-industrial public parks, the immeasurable benefits, those that address the aesthetic and social needs of people, are some of the most important to increasing people’s quality of life, whether it is a conscious or unconscious perception. These parks, through the transformation process, display a myriad of favorable characteristics that link spatial, physical, social, and symbolic qualities, however the one irreplaceable factor that post-industrial sites possess is their historic integrity; by reusing and transforming their archival elements into spaces with which people may interact and enjoy, a region’s history becomes engrained in a cherished present-day amenity. Re-designing and re-using these places is an important way to preserve an area’s past.

Through this re-design, a former industrial site must meet the physical and aesthetic needs of the users and perform various functions in order to be successful. The evaluation created in this research addresses the range of qualities that are vital to the success of a post-industrial public park overall, and how contributing elements can affect the qualities of each space to create dynamic, captivating places.

Evaluations are an important way to understand the public realm and how people perceive and interact with their environments. Through these observation evaluations and further studies including surveys and more specific comparative analyses, designers and laypeople alike may further understand what qualities of post-industrial sites create dynamic and successful public parks which meet the physical, social, and aesthetic needs of the people they serve.
References


Image References


